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TRAFFIC COLLISION STATISTICS

Police-attended Injury and Fatal Collisions

British Columbia 1999

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Traffic Accident System

Introduction

Overview

British Columbia's Traffic Accident System compiles and maintains information on all reported traffic collisions occurring in the Province. Traffic collision information is used by the Insurance Corporation of British Columbia (ICBC) to determine collision trends over time and to identify problem factors (e.g., driver, vehicle, environmental). The information supports road safety programs such as CounterAttack. It is used to evaluate new provincial road safety initiatives such as Intersection Safety Cameras; for monitoring of commercial vehicle collision trends and commercial vehicle safety programs; for identification of highway locations which may require improvement; for highway planning; and for guiding the development of new policies and programs to reduce the frequency and severity of collisions in the Province.

Data extracted from the system are also used in planning and research by other provincial government ministries and by the federal government. The Ministry of Transportation and Highways and municipal engineering departments across the Province rely on traffic collision data to assist in the planning, design and improvement of roads and highways. The Royal Canadian Mounted Police (RCMP) and municipal police forces may also use the data to assist in determining law enforcement priorities and locations to target traffic enforcement.

Data collection and processing

Motor vehicle collisions are reportable in British Columbia if they result in personal injury or death or aggregate property damage in excess of $1,000 ($600 for a motorcycle). The damage level thresholds were amended on January 1, 1991 from a previous level of $400. A motorist must report a collision to police within 24 hours of occurrence (48 hours in remote communities).

The Traffic Accident Police Investigation Report (MV6020, formerly known as MV104) is completed by a police officer or employee. When a police officer attends a collision, the report is most often completed at the scene. In many police jurisdictions, the police do not attend all reportable collisions; in the case of unattended collisions, a motorist is required to report the collision to a police station if it meets the injury or aggregate damage criteria. These collision reports are referred to as "unattended" or "self-reports". Several police jurisdictions no longer accept self-reports at the counter, with the result that these "reportable" collisions do not get recorded and are lost to the system.

The police forward completed MV6020s to the ICBC Office in Victoria. ICBC staff screen and microfilm the forms and then enter the data into an Oracle database. The Traffic Accident System interfaces with the Driver Licensing System so that selected information about a collision is transferred to the Driver Licensing System and included on an individual's driving record.

In 1996, significant changes took place in police reporting of collisions. Many police agencies changed their standards or practices for collision reporting, thus resulting in fewer reported collisions overall, in particular those involving property damage only or minor injury. A few jurisdictions even suspended the submission of all MV104s to MVB/ICBC. Such changes rendered year to year comparisons of annual collision statistics untenable. By January 1999, all police jurisdictions had resumed full submission of completed collision reports, although police attendance at collisions has remained well below pre-1996 levels. The reporting level appears to have stabilised between 1998 and 1999, but year-to-year comparisons are not yet recommended.

This publication

In order to maintain this report as a reliable source of annual collisions statistics, information provided includes only police-attended personal injury and fatal collisions. The decision to exclude property damage only collisions and unattended collisions was due to the changes in collision reporting standards and practices by the police, as well as the lack of accuracy of self reported collisions. For the past three years, the Annual Traffic Collision Statistics Report has been based on police-reported injury and fatal collisions only (with the exception of Section 1, Summary Statistics and Historical Trends).

Important: Numbers presented in this publication represent all police reported fatal collisions and police attended injury collisions. They underestimate the actual numbers of such collisions because police do not attend all injury collisions.

New this Year

The definition of a licensed driver has been changed to Active licensed driver. This change results in a drop of about 22% in the number of drivers and affects collision rates calculated using drivers as a denominator. To allow year-to-year comparisons, the licensed driver count has been re-calculated from 1994 (Table 1.03). **Readers are advised to use this table rather than tables from previous years' publications.** See Section 1 and Section 5 for details.

Section 7 has been renamed "Occupant Restraint Use" rather than "Safety Equipment Use". To eliminate confusion and redundancy, information on helmet use is provided in Section 12, "Motorcycles", and Section 14, "Bicycles", and has been deleted from Section 7.

Several tables in Section 10, Alcohol Related Collisions and Section 11, Unsafe Speed Related Collisions have been replaced with tables that the reflect age and gender of the non-drinking and non-speeding drivers in alcohol related and unsafe speed related collisions respectively. Past publications included tables which combined ALL drivers in alcohol-related and speeding-related collisions, irrespective of which vehicle they were in (i.e., drinking/ non-drinking; speeding/ non-speeding).

The definition of a Commercial Vehicle has been revised again in 1999, removing general construction and road construction vehicles (included in 1998), and adding emergency vehicles, taxis and school buses. In 1998, a separate section was devoted to the latter three vehicle types. Section 18 is eliminated in 1999, but emergency vehicles, taxis and school buses are the subject of separate tabulations included in Section 15, Commercial Vehicles.

Important: The totals presented in the Summary Statistics Section are higher than those presented elsewhere in this book. For example, the summary section shows a total of 413 fatalities in 1999, while other sections report a total of 402. The dynamic nature of the database accounts for this discrepancy. There is a time lag between collision occurrence and data entry. Normally this time lag is 30-60 days, but in extreme instances it can be more than one year, due to late receipt of reports. The other sections in this book were completed at an earlier date and represent the number of collisions in the database at the time of data extraction. Totals in the summary section were calculated at a later date, to show the most recent available information. All numbers reported in this publication may be subject to minor change over time.

Acknowledgement

We are indebted to Delta Police Department for their photographic contributions to this publication. Their assistance is greatly appreciated.

Further Information

We hope that this publication will provide you with the answers you are seeking about collisions in British Columbia. The ultimate goal is to increase public awareness of the importance of safe driving and to contribute to improved traffic safety on British Columbia's roads and highways. Better information leads to better solutions.

If you have questions regarding the contents of this publication, or if you would like to order additional copies, please contact:

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Glossary

Air Bag
Inflatable safety device usually stored in vehicle dashboard or steering wheel/column. Upon impact, bag is released and inflated to cushion vehicle occupants and prevent serious injury.

Alcohol Involvement
Any alcohol involvement, suspected or confirmed, e.g., driver had been drinking; odour of liquor.

Artificial Glare
Glare caused by streetlight, headlights, or other man-made light source.

A.T.V.
All Terrain Vehicle: any type of vehicle propelled by motorized power and capable of travel on or off a highway as defined in the HIGHWAY ACT and that is designated as an All Terrain Vehicle by regulation under the ALL TERRAIN VEHICLE ACT.

Bicycle
"Cycle Bi/Tri" 2 or 3 wheeled, pedal driven vehicle.

Child Restraint
Federally approved child safety seat.

Collision
The encounter of a moving vehicle with another moving vehicle or with a fixed object. Reportable in British Columbia when injury or death occurs or when greater than $1,000 aggregate property damage is sustained; in the case of a motorcycle when greater than $600 in damage is sustained; in the case of a cycle, when greater than $25 in damage is sustained.

Comb. Unit Trk/hvy
Combination Unit - Truck/Heavy: truck and trailer unit over 10,900 kg.

Comb. Unit /Trk/lt
Combination Unit - Truck/Light: truck and trailer unit, trailer under 4,600 kg., and total not over 10,900 kg.

Comb. Unit Tractor Tlr
Combination Unit - Tractor Trailer: tractor and semi-trailer unit, over 10,900 kg.

Comb. Unit Trac/tlr & Pup
Combination Unit - Tractor Trailer & Pup: tractor and semi-trailer and pup trailer (pup = 4 wheel trailer).

Commercial Vehicle
A vehicle licensed as such under the COMMERCIAL TRANSPORT ACT and used primarily for commercial/business purposes.

Construction
Road maintenance, and/or construction on roadway which contributes to collision.

Contributing Factor
Those circumstances or events that the attending police officer perceivers to directly contribute to a traffic collision.

Crash Cushion
Water or sand filled container placed against abutments, etc., used to absorb vehicle impact and lessen collision severity.

Driver Training Vehicle
Licensed driving school vehicle being used for driver training at time of collision

Emergency Vehicle
Motor vehicle carrying rescue or first aid equipment, whether or not actually responding to an emergency at time of collision.

Farm Vehicle
A vehicle used primarily as an implement of husbandry and licensed as such under the COMMERCIAL TRANSPORT ACT,e.g., farm tractor, combine, thresher.

Fatal Collision
Any motor vehicle or other road vehicle collision occurring on a 'public highway' as defined in the MOTOR VEHICLE ACT which results in fatal injuries to one or more persons and these persons are deceased within 30 days of the collision. A suicide, although not an "accident", is considered a fatal motor vehicle collision, however, a homicide, also not an " accident", is not considered a fatal motor vehicle collision.

General Construction Vehicle
Backoe, bulldozer, crawler, digger, excavator, forklift, loader, mower, skidder, trencher.

Government Vehicle
Federal; Provincial; Municipal; Regional District: registration indicates government, but does not include emergency vehicles.

Heavy Commercial Vehicle
Single or combination truck unit over 10,900 kg.

Holiday
Time period beginning at 6 pm the evening before a holiday or holiday weekend, and ending at midnight the last day of the holiday or holiday weekend.

Illumination
Man-made lighting in the collision vicinity, e.g., street lighting. This does not refer to temporary illumination which

comes from passing vehicles or from moonlight, even if those may have contributed to the collision.

Impact Attenuator
Refer to "Crash Cushion".

Industrial Road
Any road which is constructed or exists for the transportation of natural resources, raw or manufactured, or the transportation of machinery, materials, or personnel by means of motor vehicle; includes all bridges, wharves, log dumps, and works. Does not include public roads, privately owned roads or roads used solely for construction or maintenance of power lines, etc.

Jack-knifing
Attached vehicle fails to follow path of towing vehicle. Vehicle and trailer turn or rise to 90 degrees or less.

Lighting Conditions
DARK/FULL ILLUMINATION: dark condition but collision area is fully illuminated by artificial light.

DARK/NO ILLUMINATION: complete darkness.

DARK/SOME ILLUMINATION: dark condition but some artificial light exists.

Modified Vehicle
A vehicle which deviates from the manufacturer's specifications.

Moped
Vehicle capable of being operated by pedals and is equipped with a motor under 50 cc (any class driver's licence or special class 6). Moped on flat surface not to exceed 50 km/h under power.

Motor Vehicle
A motorized device in, upon, or by which a person or thing is, or may be transported or drawn upon a highway, except a device designed to be used exclusively upon stationary rails or tracks.

Obstruction/debris
Debris in travelled portion of roadway which contributes to a traffic collision.

Oversize Vehicle
A vehicle more than 12.5 meters in length with width greater than 2.6 meters, and height greater than 4.15 meters.

Off Highway
Private place, field, bush, e.g., All Terrain Vehicles on private road indicated by signs.

Personal Injury Collision
Any motor vehicle or other road vehicle collision occurring on a 'public highway' as defined in the MOTOR VEHICLE ACT which results in injury but not death to one or more persons.

Primary Collision Occurrence
The key event of an collision.

Property Damage Collision
Any motor vehicle or other road vehicle collision occurring on a 'public highway' as defined in the MOTOR VEHICLE ACT in which greater than $1,000 aggregate property damage, or in the case of a motorcycle $600, or in the case of a cycle $25 damage is sustained, but no injury or death occurs.

Public Bus
Any public transportation bus, city transit, or tourist bus.

Recreational Vehicle Use
Vehicle used for personal use outside usual environment, e.g., vacation, sightseeing.

Road Construction Vehicle
Grader, paver, roller.

Safety Equipment
Seatbelts, motorcycle helmets, airbags, child restraints.

School Bus
A motor vehicle used for conveyance of children to and from school by or under contract with the authority in charge of the school.

Sign Obstruction
Temporary sign erected on roadway; sign obstructed by trees, etc.

Single Unit Trk/Hvy
Single Unit Truck/Heavy: single unit truck over 10,900 kg.

Single Unit Trk/lt
Single Unit Truck/Light: single unit truck up to 10,900 kg.

Special Vehicles
Road construction vehicles, general construction vehicles, mobile home in transit, mobile crane.

Victim
A person involved in a motor vehicle or other road vehicle collision who is injured or killed.

Vehicle
A device in, upon, or by which a person or thing is, or may be transported or drawn upon a highway, except a device designed to be moved by human power or used exclusively upon stationary rails or tracks. (Please note, in this publication, bicycles are included with vehicles when a collision involves a bicycle and a motor vehicle)

Yaw
Body of the vehicle is on an exaggerated lean to one side while continuing forward and wheels side slipping while rotating on the surface, forming angular striation on the highway surface.

Summary Statistics & Historical Trends SECTION 1

Reporting

Police-reported collisions do not include all reportable collisions in the province. This is particularly the case since 1996 when major changes in police reporting occurred. Police in some municipalities began to attend only collisions of a more serious nature and some discontinued accepting self-reports at the counter. These changes have had a profound impact on the total number of collisions recorded in the BC traffic collision database. The numbers of reported collisions of all types (property damage only, personal injury and fatal) are underreported after 1995.

From 1995 to 1996, total reported collisions dropped by 19% (from 93,490 to 75,288). From 1996 to 1997, they fell by a further 37% (to 47,495). During these years, a handful of police jurisdictions ceased to submit collisions report forms altogether. Fortunately, from 1998, the police reporting level appears to have stabilised at around 42,000 collisions per year and all police jurisdictions submit completed MV6020 forms.

The long-term traffic collision trends were also affected by an official reporting level change that occurred on January 1, 1991. On that date the minimum reporting levels for property damage only traffic collisions were increased from $400 to $1,000 for vehicles, and to $600 for motorcycles. As a result, there were more than 55,000 fewer property damage only collisions reported in 1991 than in the previous year. Official criteria for personal injury and fatal collision reporting have not changed. **To illustrate trends in reporting, this chapter shows all collisions in the database, including property damage only and self-reports. In all other chapters of this book, all tables and graphs refer to police-attended injury and fatal collisions only.**

Summary Statistics

Collisions

In 1999, 41,326 traffic collisions were reported. Of these, 35,747 (86.5%) were attended by police.

Fatalities

The total reported number of fatally injured victims was 413.

On average a fatality occurred every 21.2 hours in 1999.

Injuries

The number of people reported injured in 1999 was 29,974. On average, 82.1 people were reported injured each day in 1999.

Drivers Licensed

In 1999, there were 2,733,771 actively licensed drivers holding a BC driver's licence. This number includes 1,424,602 males and 1,309,009 females. **Note that the definition of licensed driver has been changed to include only active licensed drivers. Driver counts reported in previous years' publications cannot be compared with the counts reported in the current publication.**

Vehicles Licensed

In 1999, there were 3,279,359 licensed vehicles, an increase of 1.3% over 1998.

Please note: The total numbers of fatalities and fatal collisions reported since 1995 are underrepresented due to police failing to submit all fatal collision reports. Following efforts by the RCMP and ICBC to restore police reporting of fatal collisions, reporting of fatal collisions improved substantially in 1998 and again in 1999. However, for undetermined reasons, the number of reported fatal collisions is still less than 100% of those that meet the TAS criteria of a reportable fatal collision. Due to the unspecified number of "missing" fatal collisions, the apparent changes in fatalities from year to year may not correspond to real increases or decreases.

Please note: The numbers presented in this section are based on data extracts performed at a later date than those in other sections in the book. THERE ARE SOME DISCREPANCIES REGARDING THE TOTAL NUMBER OF POLICE ATTENDED INJURY AND FATAL COLLISIONS AND VICTIMS BETWEEN THIS SECTION AND OTHER SECTIONS.

Table 1.01 – Long term reported traffic collision and casualty statistics *

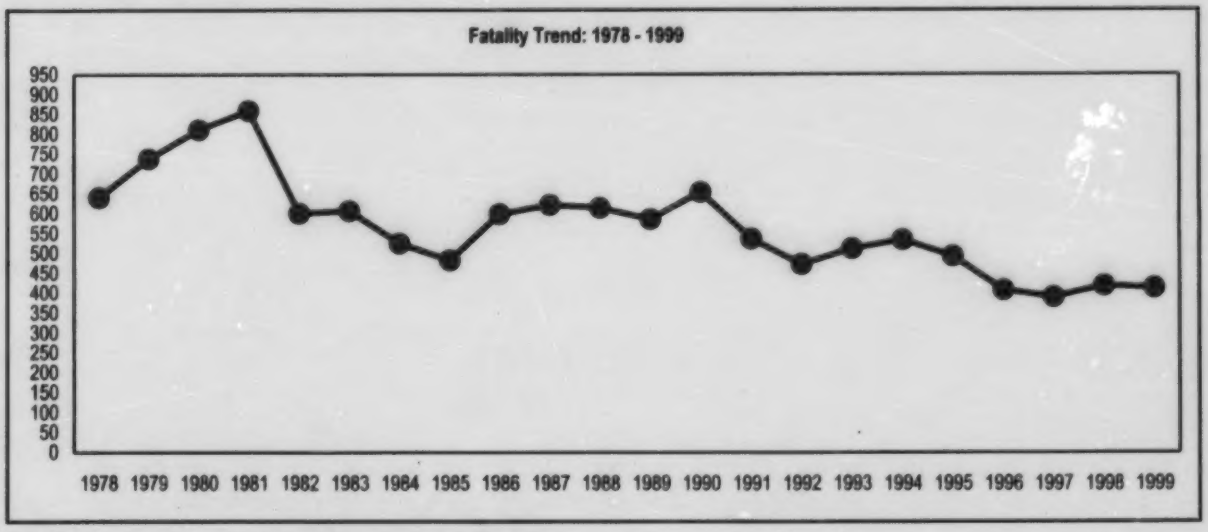
Year	Collisions				Victims		
	Property Damage Only	Injury	Fatal	Total	Injured	Killed	Total
1978	89,177	22,905	553	112,635	33,105	640	33,745
1979	96,936	26,299	628	123,863	37,809	738	38,547
1980	114,199	28,668	710	143,577	41,500	811	42,311
1981**	96,444	30,626	761	127,831	44,123	859	44,982
1982	87,682	23,662	524	111,868	33,807	601	34,408
1983	78,976	22,567	522	102,065	31,855	607	32,462
1984	75,113	22,946	447	98,506	32,407	525	32,932
1985	77,777	24,723	428	102,928	34,368	483	34,851
1986	83,902	28,623	514	113,039	40,378	599	40,977
1987	84,630	29,194	542	114,366	41,291	622	41,913
1988	101,277	30,935	535	132,747	44,161	615	44,776
1989	111,300	33,062	491	144,853	47,471	587	48,058
1990	122,291	35,073	567	157,931	50,569	654	51,223
1991***	66,563	32,975	463	100,001	47,383	537	47,920
1992	62,331	33,328	419	96,078	48,435	473	48,908
1993	60,984	32,393	442	93,819	46,952	512	47,464
1994	63,362	33,337	458	97,157	48,299	534	48,833
1995	60,398	32,681	411	93,490	47,474	493	47,967
1996	47,785	27,146	357	75,288	40,204	407	40,611
1997	26,091	21,064	340	47,495	31,524	390	31,914
1998	22,097	19,948	365	42,410	29,900	418	30,318
1999	20,987	19,974	375	41,336	29,974	413	30,387

* This table is based on total reported collisions, both police attended and unattended.

** On January 1, 1981, the minimum reporting level for property damage collisions was increased from $200 to $400. This has significantly reduced the number of accidents reported in 1981.

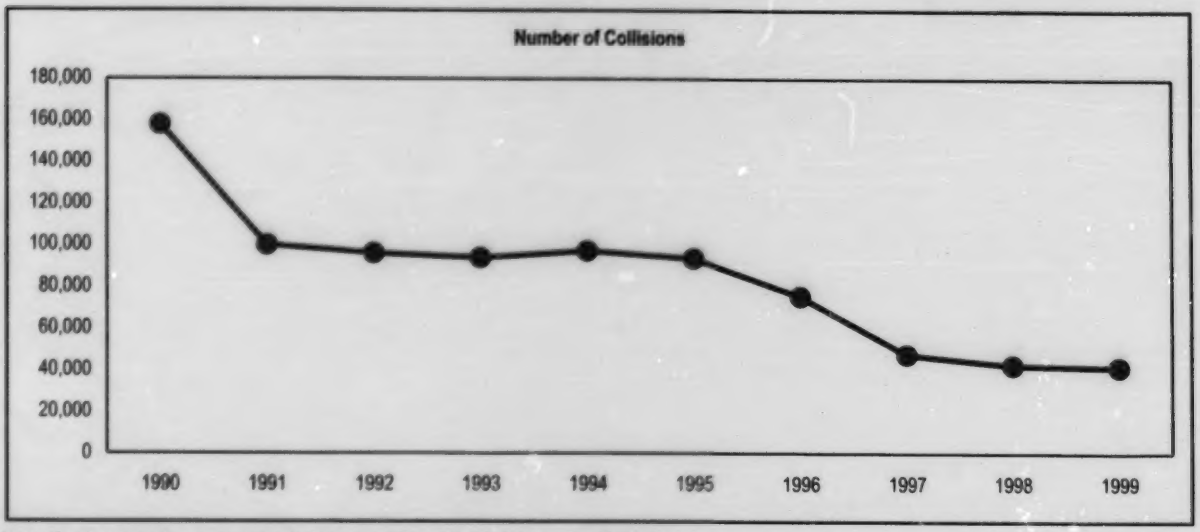
***On January 1, 1991, the minimum reporting level for property damage collisions was increased from $400 to $1,000. This has significantly reduced the number of accidents reported in 1991.

Figure 1.01 – Reported traffic fatality trend: 1978 - 1999



Note: Graph is based on total reported collisions, both police attended and unattended.

Figure 1.02 – Ten year reported collision trend: 1990 - 1999



Note: Graph is based on total reported collisions, both police attended and unattended.

Table 1.02 – Summary statistics: Collisions and victims*

					% Change**		
	1996	**1997**	**1998**	**1999**	**97 - 96**	**98 - 97**	**99 - 98**
Collisions							
Property Damage Only	47,785	26,091	22,097	20,987	-45.40%	-15.31%	-5.02%
Injury	27,146	21,064	19,948	19,974	-22.40%	-5.30%	0.13%
Fatal	357	340	365	375	-4.76%	7.35%	2.74%
Total Reported Collisions	**75,288**	**47,495**	**42,410**	**41,336**	**-36.92%**	**-10.71%**	**-2.53%**
Victims							
Number of Persons Injured	40,204	31,524	29,900	29,974	-21.59%	-5.15%	0.25%
Number of Persons Killed	407	390	418	413	-4.18%	7.18%	-1.20%
Total Victims	**40,611**	**31,914**	**30,318**	**30,387**	**-21.42%**	**-5.00%**	**0.23%**

* This table is based on total reported collisions, both police attended and unattended.

** The percentage change largely reflects changes in number of collisions reported by the police, not the change in actual number of collisions which occurred.

Table 1.03 – Summary statistics: Drivers and vehicles

							% Change				
	1994	1995	1996	1997	1998	1999	95-94	96-95	97 - 96	98 - 97	99 - 98
B.C. Population	3,681,000	3,784,000	3,882,000	3,959,000	3,998,000	4,028,000	2.80%	2.59%	1.98%	0.99%	0.75%
Drivers Licensed											
Male Drivers	1,272,431	1,298,264	1,337,586	1,359,719	1,406,658	1,424,602	2.03%	3.03%	1.65%	3.45%	1.28%
Female Drivers	1,134,741	1,163,907	1,203,719	1,231,545	1,285,203	1,309,009	2.57%	3.42%	2.31%	4.36%	1.85%
Unknown	137	162	171	171	161	160					
Total	**2,407,309**	**2,462,333**	**2,541,476**	**2,591,435**	**2,692,022**	**2,733,771**	**2.29%**	**3.21%**	**1.97%**	**3.88%**	**1.55%**
Vehicles Licensed											
Passenger Vehicles	1,968,693	1,986,661	2,010,542	2,065,051	2,090,511	2,121,178	0.91%	1.20%	2.71%	1.23%	1.47%
Commercial Vehicles	693,809	706,402	716,117	731,051	738,460	744,954	1.82%	1.38%	2.09%	1.01%	0.88%
Trailers	328,819	337,615	351,451	357,207	353,612	356,506	2.68%	4.10%	1.64%	-1.01%	0.82%
Motorcycles	53,518	52,878	52,133	54,270	55,974	56,721	-1.20%	-1.41%	4.10%	3.14%	1.33%
Total	**3,044,839**	**3,083,556**	**3,130,243**	**3,207,579**	**3,238,557**	**3,279,359**	**1.27%**	**1.51%**	**2.47%**	**0.97%**	**1.26%**

Note: B.C. population estimates from Statistics Canada
Driver counts from previous years' publications can not be compared with the revised driver counts shown above.
Driver counts back to 1994 were recalculated using the active driver definition.

Table 1.04 – Reported collisions by police attendance: 1990 – 1999

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Police Attended Collisions										
Property Damage Only	36,976	24,993	25,510	25,486	27,223	25,576	22,620	17,998	17,481	17,200
Injury	23,864	21,456	22,102	22,431	23,426	22,979	20,857	18,359	17,984	18,183
Fatal	566	463	418	442	458	411	356	339	365	374
Total attended collisions	61,406	46,912	48,030	48,359	51,107	48,966	43,833	36,696	35,830	35,757
Police Unattended Collisions										
Property Damage Only	85,315	41,570	36,821	35,498	36,139	34,822	25,165	8,093	4,616	3,787
Injury	11,209	11,519	11,226	9,962	9,911	9,702	6,289	2,705	1,964	1,791
Fatal	1	0	1	0	0	0	1	1	0	1
Total unattended collisions	96,525	53,089	48,048	45,460	46,050	44,524	31,455	10,799	6,580	5,579
Total Fatal Collisions	**567**	**463**	**419**	**442**	**458**	**411**	**357**	**340**	**365**	**375**
Total Collisions	**157,931**	**100,001**	**96,078**	**93,819**	**97,157**	**93,490**	**75,288**	**47,495**	**42,410**	**41,336**
Total Victims	**51,223**	**47,920**	**48,908**	**47,464**	**48,833**	**47,967**	**40,611**	**31,914**	**30,318**	**30,387**

Note: Collisions which are neither attended by police or not driver self-reported do not get recorded in the database.

Figure 1.03 – Property damage only collisions by police attendance

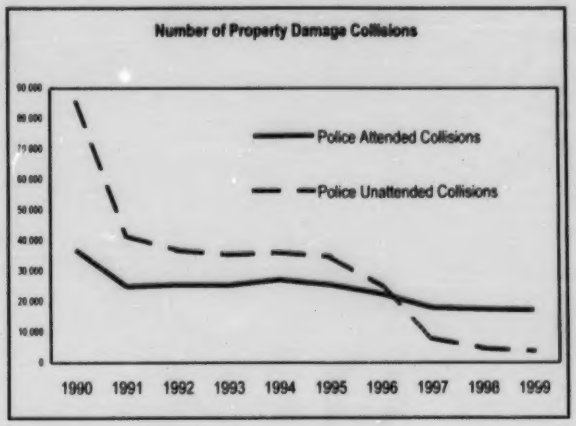

Number of Property Damage Collisions
Police Attended Collisions
Police Unattended Collisions
1990 1991 1992 1993 1994 1995 1996 1997 1998 1999

Figure 1.04 – Injury collisions by police attendance

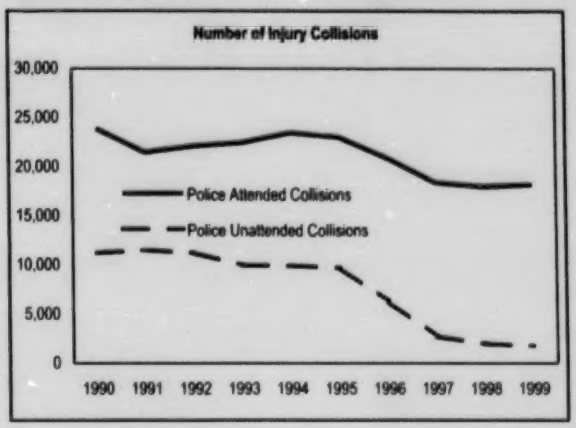
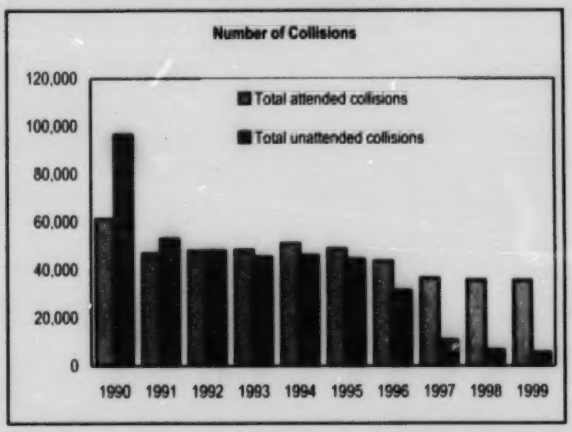


Figure 1.05 – Total number of collisions by police attendance



Time Of Occurrence in 1999 Collisions

SECTION 2

The highest number of reported casualty collisions (involving injured or killed) occurred in December of 1999. The lowest number of casualty collisions occurred in February of 1999.

The highest casualty (persons injured or killed) count occurred in December of 1999 (2,734 casualties). The lowest count occurred in April of 1999 (1,975). December also experienced the highest number of fatalities (48), and April had the lowest (27).

As in previous years, more casualty collisions happened on Friday than on any other day of the week (16.4%). Next highest was Saturday (15.7%). Sunday had the fewest casualty collision (12.8%).

Also similar to the pattern in previous years, the greatest number of injury collisions occurred between the hours of 4 pm and 5 pm in 1999 (7.9% of all personal injury collisions). Notably, 28% of all injury collisions occurred between 3 pm and 7 pm (i.e. the evening rush hour).

The greatest number of reported fatal collisions happened between 4 pm and 5 pm in 1999 (8% of all fatal collisions).

Table 2.01 – Collisions and victims by month

Month	Collisions			Victims		
	Injury	Fatal	Total	Injured	Killed	Total
January	1,407	24	1,431	2,146	28	2,174
February	1,332	26	1,358	2,007	29	2,036
March	1,360	26	1,386	2,087	32	2,119
April	1,305	24	1,329	1,948	27	1,975
May	1,427	32	1,459	2,143	35	2,178
June	1,533	32	1,565	2,378	35	2,413
July	1,575	37	1,612	2,457	39	2,496
August	1,610	33	1,643	2,507	36	2,543
September	1,603	30	1,633	2,405	31	2,436
October	1,698	30	1,728	2,558	33	2,591
November	1,593	29	1,622	2,394	29	2,423
December	1,739	42	1,781	2,686	48	2,734
Total	**18,182**	**365**	**18,547**	**27,716**	**402**	**28,118**

Figure 2.01 – Distribution of casualty collisions and victims by month

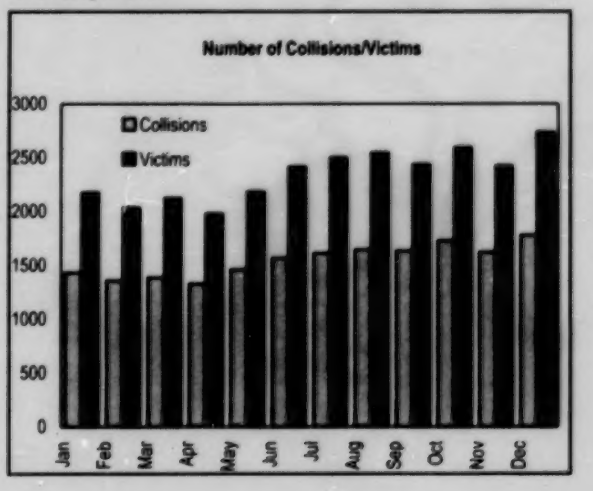


Table 2.02 – Collisions and victims by day of week

Day of Week	Collisions			Victims		
	Injury	Fatal	Total	Injured	Killed	Total Victims
Sunday	2,322	55	2,377	3,941	57	3,998
Monday	2,454	60	2,514	3,615	69	3,684
Tuesday	2,525	39	2,564	3,683	44	3,727
Wednesday	2,545	52	2,597	3,729	59	3,788
Thursday	2,497	36	2,533	3,668	40	3,708
Friday	2,981	62	3,043	4,524	65	4,589
Saturday	2,858	61	2,919	4,556	68	4,624
Total	**18,182**	**365**	**18,547**	**27,716**	**402**	**28,118**

Figure 2.02 Distribution of casualty collisions and victims by day of week

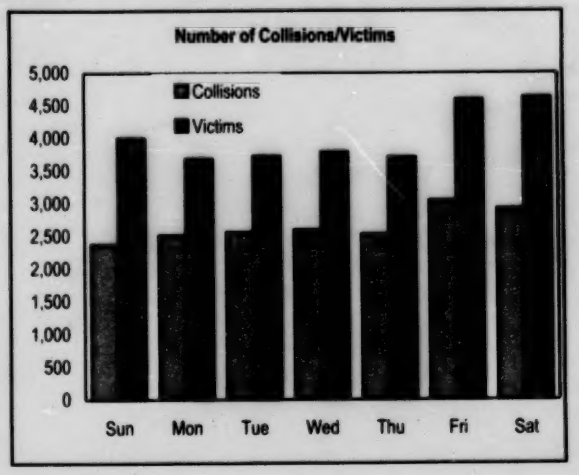


Table 2.03 – Collisions and victims by hour

	Collisions			Victims		
Hour	**Injury**	**Fatal**	**Total**	**Injured**	**Killed**	**Total**
0000-0059	476	12	488	747	12	759
0100-0159	387	20	407	645	23	668
0200-0259	436	16	452	708	17	725
0300-0359	266	16	282	415	18	433
0400-0459	171	7	178	254	8	262
0500-0559	192	9	201	278	10	288
0600-0659	308	10	318	450	10	460
0700-0759	525	13	538	743	14	757
0800-0859	795	11	806	1,158	12	1,170
0900-0959	703	17	720	1,014	17	1,031
1000-1059	772	21	793	1,147	24	1,171
1100-1159	871	10	881	1,290	11	1,301
1200-1259	1,021	10	1,031	1,507	12	1,519
1300-1359	1,042	14	1,056	1,553	15	1,568
1400-1459	1,114	18	1,132	1,739	21	1,760
1500-1559	1,305	15	1,320	1,984	17	2,001
1600-1659	1,430	29	1,459	2,149	33	2,182
1700-1759	1,360	22	1,382	2,070	26	2,096
1800-1859	1,077	16	1,093	1,647	17	1,664
1900-1959	952	22	974	1,474	22	1,496
2000-2059	742	10	752	1,151	10	1,161
2100-2159	686	14	700	1,141	18	1,159
2200-2259	632	16	648	1,058	16	1,074
2300-2359	556	16	572	882	18	900
Unknown	363	1	364	512	1	513
Total	**18,182**	**365**	**18,547**	**27,716**	**402**	**28,118**

Figure 2.03 – Distribution of casualty collisions and victims by collision hour

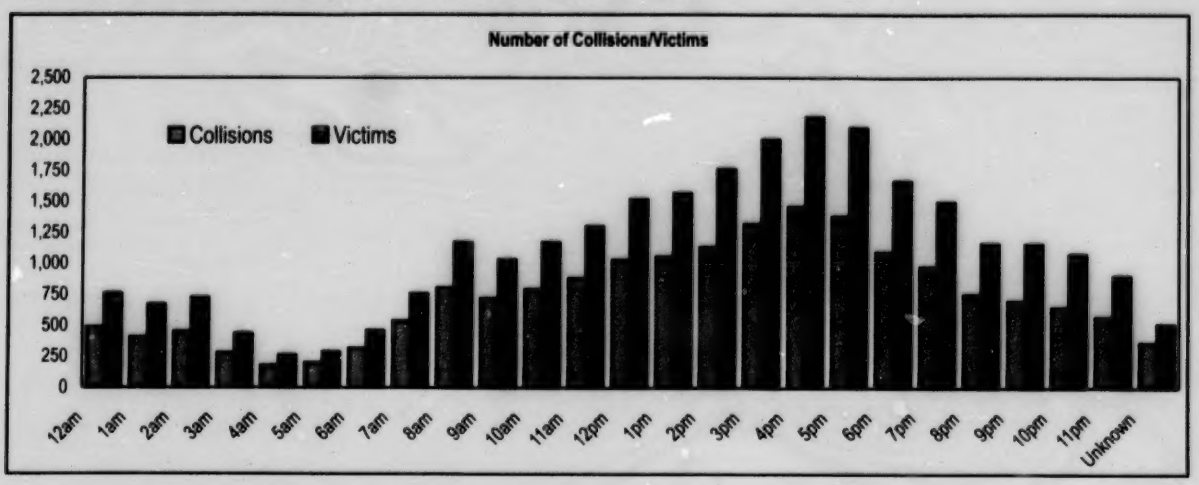


Table 2.04 – Victims in 1999 holiday collisions

Holiday Period	Injured	Killed	Total
Easter (April 1 to April 5)	327	2	329
Victoria Day (May 21 to May 24)	262	9	271
Canada Day (June 30 to July 1)	81	3	84
B.C. Day (July 30 to August 2)	282	5	287
Labour Day (September 3 to September 6)	280	5	285
Thanksgiving (October 8 to October 11)	224	1	225
Remembrance Day (November 10 to November 11)	99	0	99
Christmas (December 24 to December 27)	194	8	202
New Years 99/00 (December 31 to January 2)	230	2	232
Total	**1,979**	**35**	**2,014**

Note: Holiday periods are calculated from 1800 of the first day to 2400 of the last day. For example, Easter holiday period was calculated starting from 1800 on April 1 to 2400 on April 5. Holiday may occur on a weekend one year but not on a weekend in other years. This will affect year to year comparisons.

Contributing Factors In 1999 Collisions SECTION 3

The BC Traffic Accident Database recognizes that a collision is often the result of an interaction of events or situations. Contributing factors are those circumstances, events or behaviours that the attending police officer judges to contribute to a traffic collision. The Traffic Accident Police Investigation Report permits up to three contributing factors to be attributed to *each* driver or pedestrian involved in a collision.

Procedure For Reporting Contributing Factors

In this document *all* contributing factors assigned to drivers are reflected in the presentation of the data. The report does not differentiate between whether the factors are listed as first, second or third. For example, a collision could result from a combination of "alcohol involvement" (factor 1), "unsafe speed" (factor 2) on the part of Driver 1 and "failure to yield right of way" (factor 1) and "pavement condition"(factor 2) assigned to Driver 2. This totals five different contributing factors assigned to the same collision and represents the complete information available from the Traffic Accident Database on the role of contributing factors in that collision. Tables 3.01 to 3.05 and Figures 3.01 to 3.04 present the number of factors in 1999 collisions.

In addition to the tables and graphs that consider *factors*, tables that display the same data in terms of *collisions* are also presented. These include Tables 3.06 and 3.07 and Figure 3.05 and 3.06. These tables and figures display the number of collisions in which a contributing factor was present and not the total number of occurrences of that factor. For example, if "alcohol involvement" were a factor assigned to both drivers in the same collision, in these tables, it would be counted just once for that collision. If at least one driver were also assigned a second factor (e.g., unsafe speed), the collision would be counted again under "unsafe speed". To demonstrate the difference between counting factors and counting collisions, we can see that the contributing factor, "driving without due care" was recorded in 5,651 collisions (Table 3.06), however, there were 5,818 occurrences of "driving without due care" in the database (Table 3.03). In other words, 5,818 *drivers* involved in collisions were noted as having been "driving without due care". Those same 5,818 drivers were involved in 5,651 *collisions* because there may be more than one driver involved in a single collision.

Please note: Previous versions of this publication (1993 and earlier) included a single method of presenting contributing factors, which was based on counting only the first contributing factor. Due to this procedural difference, the data on contributing factors presented in this publication cannot be easily compared with that of early publications (1993 and earlier).

Contributing Factors Summary

In 1999, 29,224 contributing factors were attributed to 18,547 reported casualty collisions.

Of all contributing factors assigned to collisions during 1999, 84.7% involved human action or condition; 13.6% were related to environmental conditions; 1.7% involved vehicle condition.

The top five most frequently reported contributing factors in 1999 personal injury collisions (as a percentage of total personal injury collisions) were, in order of magnitude:

(1) Driving without due care (30.3%);
(2) Failing to yield to the right of way (22.1%);
(3) Unsafe speed (16.5%);
(4) Alcohol involvement (11.8%);
(5) Weather Condition (10.7%).

The top five most frequently reported contributing factors in 1999 fatal collisions (as a percentage of total fatal collisions) were, in order of magnitude:

(1) Driving without due care (39.2%);
(2) Unsafe speed (33.7%);
(3) Alcohol involvement (24.6%);
(4) Weather condition (12.2%);
(5) Driving on Wrong Side of Road (9.7%).

Table 3.01 – Frequency of contributing factors in collisions by category*

Contributing Factor Category	Injury	Fatal	Total Factors	% of Total Factors
Human Action	19,395	413	19,808	67.76
Human Condition	4,794	153	4,947	16.93
Environmental Condition	3,885	80	3,965	13.57
Vehicle Factor	498	6	504	1.72
Total	**28,572**	**652**	**29,224**	**100%**

* There were 29,224 contributing factors attributed to 18,547 police attended casualty collisions in 1999. 'Frequency' represents the total number of occurrences of the contributing factors, not the number of collisions in which the contributing factors were present.

Table 3.02 – Frequency of human condition factors in injury and fatal collisions*

Human Condition Factor	Injury	Fatal	Total	% of Human Condition Factors	% of All Factors**
Alcohol Involvement	2,166	89	2,255	45.58	7.72
Driver Inexperience	1,583	23	1,606	32.46	5.50
Fell Asleep	410	22	432	8.73	1.48
Extreme Fatigue	210	3	213	4.31	0.73
Illness	135	5	140	2.83	0.48
Unconscious	118	2	120	2.43	0.41
Drugs (illegal)	94	7	101	2.04	0.35
Medication	42	2	44	0.89	0.15
Physical Disability	36	0	36	0.73	0.12
Total	**4,794**	**153**	**4,947**	**100%**	**16.93%**

* There were 29,224 contributing factors attributed to 18,547 police attended casualty collisions in 1999. 'Frequency' represents the total number of occurrences of the contributing factors, not the number of collisions in which the contributing factors were present.
** "All factors" refers to all four categories of contributing factors (see Table 3.01). In other words, "Percent of All Factors" shows the percentage each "Human Condition Factor" accounted for across all four categories of contributing factors.

Figure 3.01 – Top five human condition contributing factors in 1999 collisions

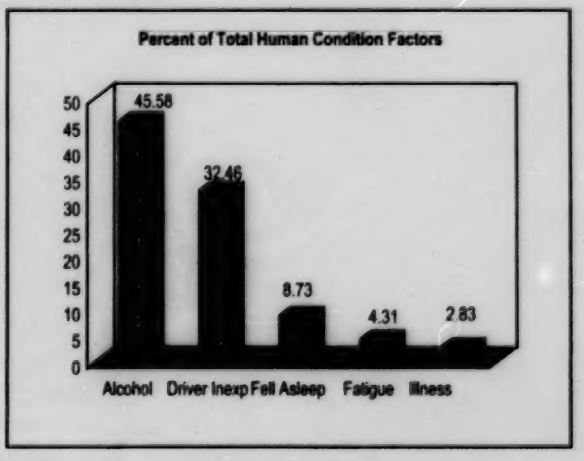


Table 3.03 – Frequency of human action factors in injury and fatal collisions*

Human Action Factors	Injury	Fatal	Total	% of Human Action Factors	% of all Factors**
Driving Without Due Care	5,674	144	5,818	29.37	19.91
Failing to Yield Right of Way	4,116	30	4,146	20.93	14.19
Unsafe Speed	3,070	123	3,193	16.12	10.93
Following too Closely	2,040	5	2,045	10.32	7.00
Ignoring Traffic Control Device	1,528	19	1,547	7.81	5.29
Improper Turning	849	4	853	4.31	2.92
Driving on Wrong Side of Road	471	35	506	2.55	1.73
Pedestrian Error/Confusion	394	29	423	2.14	1.45
Avoiding Veh/Ped/Cycle	314	7	321	1.62	1.10
Improper Passing	304	8	312	1.58	1.07
Cutting In	244	2	246	1.24	0.84
Backing Unsafely	213	0	213	1.08	0.73
Failing to Signal	76	1	77	0.39	0.26
No Driver	52	1	53	0.27	0.18
Ignoring Officer/Flagman/Guard	34	0	34	0.17	0.12
Suicide Attempt	16	5	21	0.11	0.07
Total	**19,395**	**413**	**19,808**	**100%**	**67.78%**

* There were 29,224 contributing factors attributed to 18,547police attended casualty collisions in 1999. 'Frequency' represents the total number of occurrences of the contributing factors, not the number of collisions in which the contributing factors were present.
** "All factors" refers to all four categories of contributing factors (see Table 3.01). In other words, "Percent of All Factors" shows the percentage each "Human Action Factors" accounted for across all four categories of contributing factor.

Figure 3.02 – Top five human action contributing factors in 1999 collisions

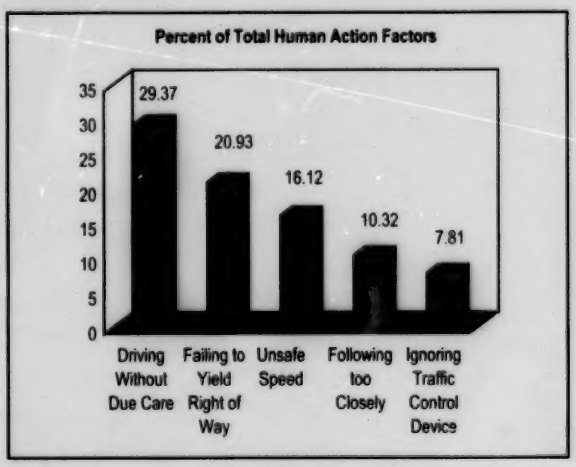


Table 3.04 – Frequency of environmental factors in injury and fatal collisions*

Environmental Factors	Injury	Fatal	Total	% of Environmental Factors	% of all Factors **
Weather Condition	2,270	51	2,321	58.54	7.94
Visibility Impaired	428	5	433	10.92	1.48
Wild Animal	251	5	256	6.46	0.88
Sunlight Glare	185	1	186	4.69	0.64
Road/Intersection Design	129	1	130	3.28	0.44
Road Maintenance/Construction	119	7	126	3.18	0.43
Obstruction/Debris on Road	109	4	113	2.85	0.39
Previous Traffic Collision	105	4	109	2.75	0.37
Domestic Animal	88	0	88	2.22	0.30
Insufficient Traffic Control	67	1	68	1.72	0.23
Pavement Condition	61	1	62	1.56	0.21
Roadside Hazard	39	0	39	0.98	0.13
Artificial Glare	27	0	27	0.68	0.09
Sign Obstruction	7	0	7	0.18	0.02
Total	**3,885**	**80**	**3,965**	**100%**	**13.57%**

* There were 29,224 contributing factors attributed to 18,547 police attended casualty collisions in 1999. 'Frequency' represents the total number of occurrences of the contributing factors, not the number of collisions in which the contributing factors were present.
** "All factors" refers to all four categories of contributing factors (see Table 3.01). In other words, "Percent of All Factors" shows the percentage each "Environmental Factor" accounted for across all four categories of contributing factors.

Table 3.05 – Frequency of vehicle factors in injury and fatal collisions*

Vehicle Condition Factors	Injury	Fatal	Total	% of Vehicle Factors	% of all Factors**
Defective Brakes	131	0	131	25.99	0.45
Defective Tires	128	2	130	25.79	0.44
Defective Headlights	47	2	49	9.72	0.17
Defective Accelerator	37	0	37	7.34	0.13
Insecure Load	29	1	30	5.95	0.10
Defective Steering	27	0	27	5.36	0.09
Defective Engine	25	0	25	4.96	0.09
Defective Brakelights	16	0	16	3.17	0.05
Oversize Vehicle	15	0	15	2.98	0.05
Defective Turn Signals	14	0	14	2.78	0.05
Defective Tow Hitch	9	1	10	1.98	0.03
Restraint System	8	0	8	1.59	0.03
Defective Suspension	6	0	6	1.19	0.02
Vehicle Modification	4	0	4	0.79	0.01
Defective Windshield	2	0	2	0.40	0.01
Total	**498**	**6**	**504**	**100%**	**1.72%**

* There were 29,224 contributing factors attributed to 18,547 police attended casualty collisions in 1999. 'Frequency' represents the total number of occurrences of the contributing factors, not the number of collisions in which the contributing factors were present.
** "All factors" refers to all four categories of contributing factors (see Table 3.01). In other words, "Percent of All Factors" shows the percentage each "Vehicle Factor" accounted for across all four categories of contributing factors.

Figure 3.03 – Top five environmental factors in 1999 collisions

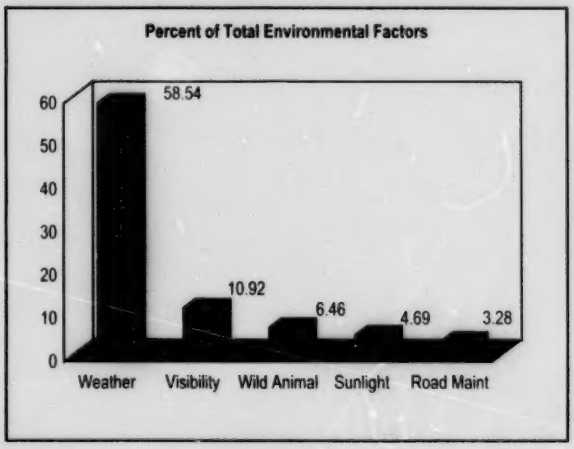


Figure 3.04 – Top five vehicle condition factors in 1999 collisions

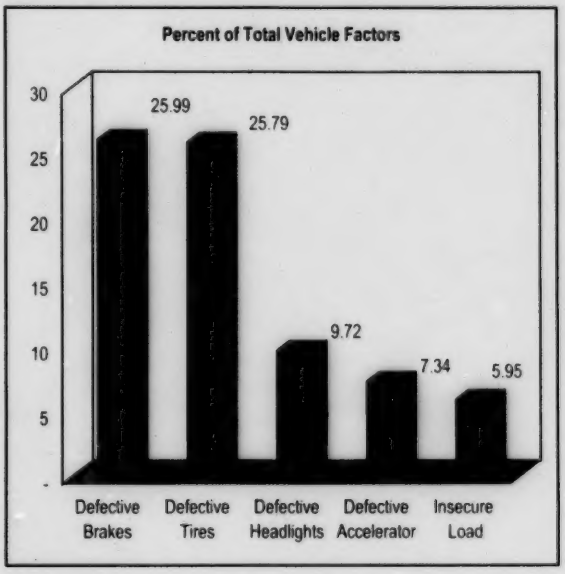


*Table 3.06 – Contributing factors in 1999 collisions in order of magnitude: By number of collisions**

Contributing Factors	Injury	Fatal	Total	% of Total Collisions
Driving Without Due Care	5,509	143	5,652	30.48
Failing to Yield Right of Way	4,015	30	4,045	21.81
Unsafe Speed	2,996	122	3,118	16.81
Alcohol Involvement	2,139	89	2,228	12.01
Weather Condition	1,954	45	1,999	10.78
Following too Closely	1,866	5	1,871	10.09
Driver Inexperience	1,550	23	1,573	8.48
Ignoring Traffic Control Device	1,482	19	1,501	8.09
Improper Turning	839	4	843	4.55
Driving on Wrong Side of Road	461	35	496	2.67
Fell Asleep	410	22	432	2.33
Pedestrian Error/Confusion	372	25	397	2.14
Visibility Impaired	374	4	378	2.04
Improper Passing	294	8	302	1.63
Avoiding Veh/Ped/Cycle	283	7	290	1.56
Wild Animal	246	5	251	1.35
Cutting In	240	2	242	1.30
Extreme Fatigue	210	3	213	1.15
Backing Unsafely	212	0	212	1.14
Other	5,633	74	5,707	30.77
Unknown	1,739	15	1,754	9.46

* "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some multiple counting of collisions occurs in this table. For example, a two vehicle fatal collision involving a driver traveling at unsafe speed and a second driver operating under the influence of alcohol would be counted above as both a fatal unsafe speed related collision, and as a fatal alcohol related collision. 'Percent of Total represents the collisions involving the contributing factor as a percentage of total police-attended casualty collisions (i.e. 18,546) recorded in British Columbia during 1999. Due to multiple occurrences of factors in a single accident, 'Percent of Total Collisions' does not add up to 100.
** "Other" includes collisions with less than 200 occurrences.

*Table 3.07 – Contributing factors in 1999 fatal collisions in order of magnitude: By number of collisions**

Contributing Factors	Fatal	% of Total Fatal Collisions
Driving Without Due Care	143	39.18
Unsafe Speed	122	33.42
Alcohol Involvement	89	24.38
Weather Condition	45	12.33
Driving On the Wrong Side Of Road	35	9.59
Failing to Yield To Right Of Way	30	8.22
Pedestrian Error	25	6.85
Driver Inexperience	23	6.30
Fell Asleep	22	6.03
Ignoring Traffic Control Device	19	5.21
Improper Passing	8	2.19
Drugs (Illegal)	7	1.92
Avoid veh/ped/cycle	7	1.92
Follow too Close	5	1.37
Illness	5	1.37
Suicide Attempt	5	1.37
Wild Animal	5	1.37
Other**	113	30.96

* "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some multiple counting of collisions occurs in this table. For example, a two vehicle fatal collision involving a driver traveling at unsafe speed and a second driver operating under the influence of alcohol would be counted above as both a fatal unsafe speed related collision, and as a fatal alcohol related collision. 'Percent of Total' represents the collisions involving the contributing factor as a percentage of total police-attended casualty collisions (i.e. 18,546) recorded in British Columbia during 1999. Due to multiple occurrences of factors in a single accident, 'Percent of Total Collisions' does not add up to 100.
** 'Other' includes collisions with less than 5 occurrences.

Figure 3.05 – Top ten contributing factors in 1999 collisions by percentage of total collisions

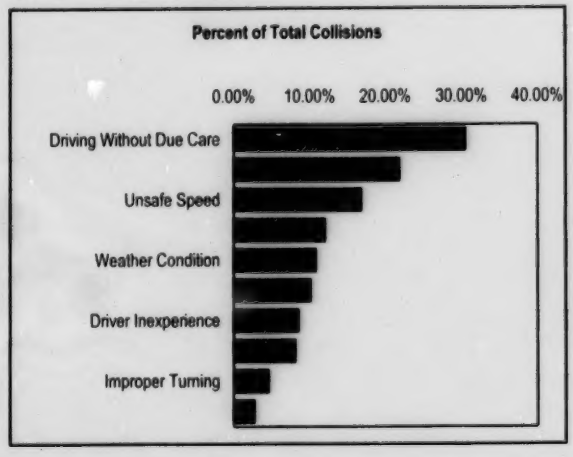
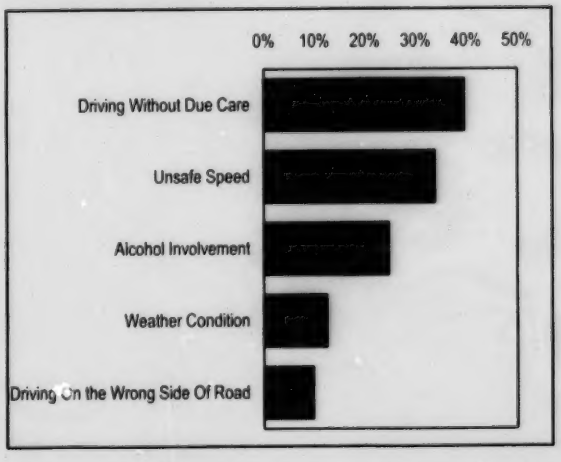


Figure 3.06 – Top five contributing factors in 1999 fatal collisions by percentage of total fatal collisions



Victims In 1999 Collisions

SECTION 4

In 1999, the number of persons killed in police-attended traffic collisions in British Columbia was 402. The number of persons reported injured in police attended collisions was 27,716.

Male victims made up 53.2% of all casualties (persons injured or killed), females made up 46.1% and 0.7% were unidentified as to gender. This ratio has remained about the same over the last several years.

Of all fatally injured victims in 1999, 69.1% were male (278 victims), and 30.9% (124 victims) were female.

The distribution of fatally injured victims among the various road user class categories in 1999 is as follows:

Important: The total victim counts reported in this section are lower than those reported in Section 1 due to the late submission or updating of reports. Refer to Section 1 for the most recent victim totals.

Drivers (49.1%)
Passengers (24.2%)
Motorcycle Drivers (6.2%)
Pedestrians (17.0%)
Bicycle drivers (2.0%)
Hanging on to vehicle (0.2%)
Unknown/Other (0.9%)

Of all persons reported injured in 1999, 17.3% were between the ages of 16 and 20, and 12.4% were between the ages of 21 and 25. The proportion of victims aged six to 15 was 6.0%.

Of all persons killed in 1999, 15.7% were between the ages of 16 and 20, 10.7% were between the ages of 21 and 25. The proportion of victims aged six to 15 was 5.7%. The number of children killed aged five and under was 5 (1.7%).

Table 4.01 – Victims injured by road user class by month in 1999

Month	Driver	Passenger	Hanging on	Pedestrian	Bicycle Driver	Bicycle Passenger	Motorcycle Driver	Motorcycle Passenger	Other	Unknown	Total Victims	% of Total
January	1,221	691	0	165	53	0	6	0	9	1	2,146	7.74
February	1,165	587	4	186	36	0	12	1	10	6	2,007	7.24
March	1,155	662	3	167	61	0	22	1	11	5	2,087	7.53
April	1,088	590	4	119	67	3	58	7	7	5	1,948	7.03
May	1,147	703	5	128	80	0	62	10	5	3	2,143	7.73
June	1,244	792	7	136	95	0	75	11	14	4	2,378	8.58
July	1,235	831	5	116	114	0	118	24	10	4	2,457	8.86
August	1,261	871	3	123	111	0	114	13	8	3	2,507	9.05
September	1,270	755	6	142	104	0	103	13	9	3	2,405	8.68
October	1,412	798	5	179	86	0	60	5	9	4	2,558	9.23
November	1,359	772	2	204	40	1	8	0	6	2	2,394	8.64
December	1,547	865	4	207	41	0	8	0	8	6	2,686	9.69
Total	**15,104**	**8,917**	**48**	**1,872**	**888**	**4**	**646**	**85**	**106**	**46**	**27,716**	**100%**

Table 4.02 – Victims killed by road user class by month in 1999

Month	Driver	Passenger	Hanging on	Pedestrian	Bicycle Driver	Motorcycle Driver	Motorcycle Passenger	Other	Unknown	Total Victims	% of Total
January	16	9	0	3	0	0	0	0	0	28	6.97%
February	16	3	0	9	0	1	0	0	0	29	7.21%
March	14	12	0	5	0	0	0	0	1	32	7.96%
April	15	6	0	3	0	3	0	0	0	27	6.72%
May	20	7	0	5	1	2	0	0	0	35	8.71%
June	22	4	1	3	1	4	0	0	0	35	8.71%
July	12	12	0	8	1	6	0	0	0	39	9.70%
August	14	12	0	3	4	2	0	1	0	36	8.96%
September	13	6	0	6	1	4	0	0	1	31	7.71%
October	17	7	0	5	0	2	1	0	1	33	8.21%
November	15	8	0	6	0	0	0	0	0	29	7.21%
December	24	11	0	12	0	1	0	0	0	48	11.94%
Total	**198**	**97**	**1**	**68**	**8**	**25**	**1**	**1**	**399**	**402**	**100.00%**

Figure 4.01 Classification of Injured Victims by Road User Class – 1999

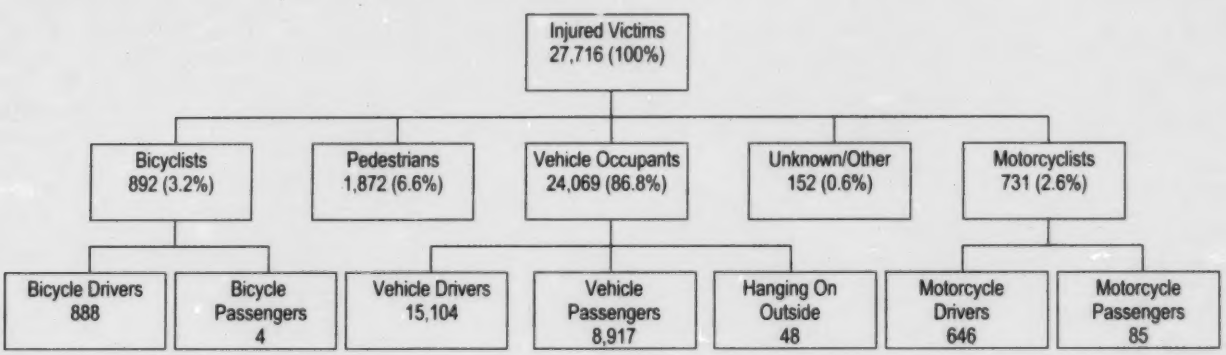


Figure 4.02 Classification of Killed by Road User Class – 1999

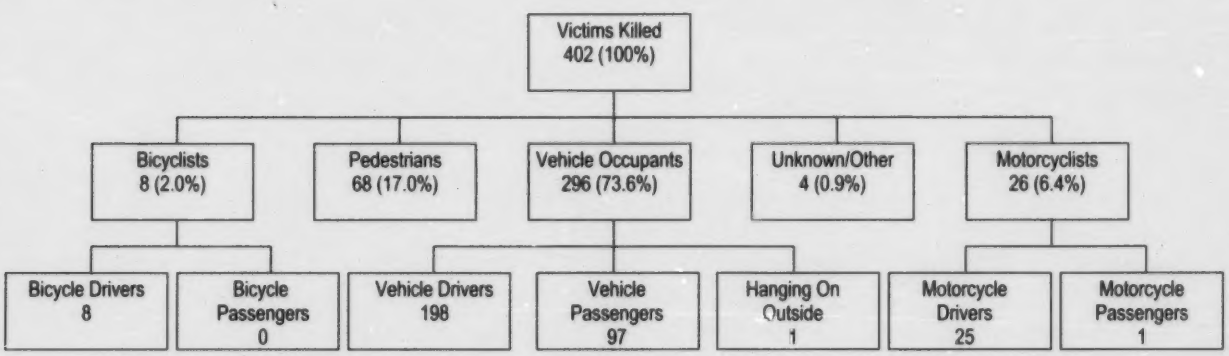


Table 4.03 – Injured victims by road user class by age in 1999

Victim Age	Driver	Passenger	Hanging on	Pedestrian	Bicycle Driver	Bicycle Passenger	Motorcycle Driver	Motorcycle Passenger	Other	Unknown	Total Victims	% of Total
1	0	66	0	4	0	0	0	0	1	1	72	0.26
2	0	59	0	10	0	0	0	0	0	0	69	0.25
3	0	61	0	5	1	0	0	0	3	1	71	0.26
4	0	91	0	6	2	1	0	1	1	2	104	0.38
5	0	79	0	9	6	1	0	1	1	0	97	0.35
6	0	79	1	13	11	0	0	0	3	2	109	0.39
7	0	82	0	15	11	0	0	0	0	0	108	0.39
8	0	100	0	14	12	0	0	1	2	1	130	0.47
9	1	80	1	22	21	0	0	1	0	0	126	0.45
10	0	110	0	25	18	0	0	0	0	1	154	0.56
11	2	88	0	16	30	1	0	0	2	0	139	0.50
12	1	100	1	22	26	0	2	4	0	1	157	0.57
13	1	113	0	41	30	0	1	1	1	0	188	0.68
14	4	134	0	46	27	0	3	2	4	0	220	0.79
15	23	229	0	39	21	0	3	2	6	2	325	1.17
16	259	440	1	44	20	0	3	4	4	1	776	2.80
17	490	473	1	42	11	0	4	0	7	2	1,030	3.72
18	527	408	1	38	13	0	13	1	3	1	1,005	3.63
19	595	374	2	35	16	0	21	6	4	2	1,055	3.81
20	535	322	0	30	17	0	25	4	6	0	939	3.39
21	467	231	5	30	15	0	25	3	1	2	779	2.81
22	464	214	1	37	13	0	36	4	1	1	771	2.78
23	402	192	0	33	18	0	22	0	0	0	667	2.41
24	361	167	1	22	18	0	20	2	1	0	592	2.14
25	372	173	0	29	18	0	25	1	1	0	619	2.23
26-30	1780	654	1	132	111	0	89	10	5	1	2,783	10.04
31-35	1641	440	9	130	96	0	76	7	4	2	2,405	8.68
36-40	1602	428	0	138	90	0	66	8	5	3	2,340	8.44
41-45	1401	377	3	114	63	0	76	2	5	1	2,042	7.37
46-50	1164	341	1	115	46	0	67	6	4	1	1,745	6.30
51-55	842	261	2	90	26	0	30	2	2	1	1,256	4.53
56-60	570	202	1	77	14	0	21	1	6	1	893	3.22
61-65	400	171	2	57	14	0	7	0	2	0	653	2.36
66-70	379	189	1	71	10	1	4	0	0	0	655	2.36
71-75	291	144	3	51	5	0	4	0	2	4	504	1.82
76-80	247	111	0	47	5	0	1	0	1	1	413	1.49
81-85	134	55	0	44	0	0	0	0	0	2	235	0.85
86-90	37	24	0	9	1	0	0	0	0	1	72	0.26
91-95	12	7	0	5	1	0	0	0	0	1	26	0.09
95+	3	2	0	0	0	0	0	0	0	0	5	0.02
Unknown	97	1046	10	165	31	0	2	11	18	7	1,387	5.00
Total	**15,104**	**8,917**	**48**	**1,872**	**888**	**4**	**646**	**85**	**106**	**46**	**27,716**	**100%**

Note: Age 1 includes victims less than 12 months of age.

Table 4.04 – Victims killed by road user class by age in 1999

Victim Age	Driver	Passenger	Hanging on	Pedestrian	Bicycle Driver	Motorcycle Driver	Motorcycle Passenger	Other	Unknown	Total	% of Total
1	0	1	0	1	0	0	0	0	1	3	0.75%
3	0	1	0	1	0	0	0	0	0	2	0.50%
5	0	0	0	0	1	0	0	1	0	2	0.50%
6	0	0	0	0	0	0	1	0	0	1	0.25%
7	0	1	0	1	0	0	0	0	0	2	0.50%
8	0	1	0	0	0	0	0	0	0	1	0.25%
9	1	1	0	0	0	0	0	0	0	2	0.50%
10	0	1	0	1	1	0	0	0	0	3	0.75%
11	0	0	0	1	0	0	0	0	0	1	0.25%
12	0	0	0	1	0	0	0	0	0	1	0.25%
13	0	1	0	0	0	0	0	0	0	1	0.25%
14	1	1	0	1	2	0	0	0	0	5	1.24%
15	0	6	0	0	0	0	0	0	0	6	1.49%
16	3	4	0	0	0	0	0	0	0	7	1.74%
17	9	7	0	1	0	1	0	0	0	18	4.48%
18	9	2	0	0	0	0	0	0	0	11	2.74%
19	10	8	0	0	0	0	0	0	0	18	4.48%
20	3	3	0	0	2	2	0	0	0	10	2.49%
21	4	2	0	1	0	3	0	0	0	10	2.49%
22	12	0	0	1	0	0	0	0	0	13	3.23%
23	5	2	0	1	0	1	0	0	0	9	2.24%
24	1	1	0	1	0	2	0	0	0	5	1.24%
25	1	1	1	3	0	0	0	0	0	6	1.49%
26-30	17	5	0	3	0	5	0	0	0	30	7.46%
31-35	17	3	0	6	0	1	0	0	0	27	6.72%
36-40	18	6	0	5	0	3	0	0	0	32	7.96%
41-45	16	3	0	4	0	3	0	0	1	27	6.72%
46-50	9	4	0	4	0	1	0	0	0	18	4.48%
51-55	10	3	0	4	0	1	0	0	0	18	4.48%
56-60	11	5	0	6	1	1	0	0	0	24	5.97%
61-65	15	4	0	2	0	1	0	0	0	22	5.47%
66-70	6	5	0	2	0	0	0	0	0	13	3.23%
71-75	6	5	0	2	0	0	0	0	0	13	3.23%
76-80	6	3	0	6	0	0	0	0	0	15	3.73%
81-85	6	6	0	5	1	0	0	0	0	18	4.48%
86-90	2	0	0	1	0	0	0	0	1	4	1.00%
91-95	0	1	0	1	0	0	0	0	0	2	0.50%
Unknown	0	0	0	2	0	0	0	0	0	2	0.50%
Total	**198**	**97**	**1**	**68**	**8**	**25**	**1**	**1**	**3**	**402**	**100.00%**

Note: Age 1 includes victims less than 12 months of age.

Table 4.05 – Victims injured by age and gender

Victim Age	Male	Female	Unknown	Total
1	32	40	0	72
2	30	37	2	69
3	42	29	0	71
4	54	50	0	104
5	57	40	0	97
6	61	46	2	109
7	59	49	0	108
8	71	59	0	130
9	62	64	0	126
10	82	72	0	154
11	78	61	0	139
12	81	74	2	157
13	96	92	0	188
14	109	111	0	220
15	141	183	1	325
16	367	409	0	776
17	553	477	0	1,030
18	586	419	0	1,005
19	623	432	0	1,055
20	576	363	0	939
21	484	294	1	779
22	448	323	0	771
23	381	286	0	667
24	333	259	0	592
25	351	268	0	619
26-30	1,533	1,250	0	2,783
31-35	1,333	1,071	1	2,405
36-40	1,242	1,097	1	2,340
41-45	1,081	960	1	2,042
46-50	883	862	0	1,745
51-55	620	635	1	1,256
56-60	484	409	0	893
61-65	314	339	0	653
66-70	321	333	1	655
71-75	243	261	0	504
76-80	183	230	0	413
81-85	103	132	0	235
86-90	38	34	0	72
91-95	16	10	0	26
95+	1	4	0	5
Unknown	540	670	177	1,387
Total	**14,692**	**12,834**	**190**	**27,716**

Figure 4.03 – Proportion of injured victims by gender

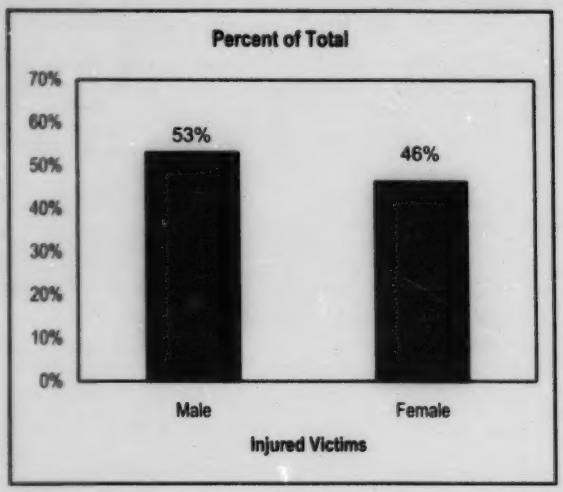


Table 4.06 – Victims killed by age and gender

Victim Age	Male	Female	Total
1	3	0	3
3	0	2	2
5	2	0	2
6	1	0	1
7	2	0	2
8	1	0	1
9	2	0	2
10	3	0	3
11	1	0	1
12	1	0	1
13	0	1	1
14	5	0	5
15	5	1	6
16	4	3	7
17	12	6	18
18	5	6	11
19	13	5	18
20	6	4	10
21	8	2	10
22	9	4	13
23	6	3	9
24	5	0	5
25	5	1	6
26-30	24	6	30
31-35	19	8	27
36-40	23	9	32
41-45	21	6	27
46-50	15	3	18
51-55	12	6	18
56-60	12	12	24
61-65	16	6	22
66-70	7	6	13
71-75	8	5	13
76-80	8	7	15
81-85	8	10	18
86-90	4	0	4
91-95	0	2	2
Unkn	2	0	2
Total	**278**	**124**	**402**

Figure 4.04 – Proportion of victims killed by gender

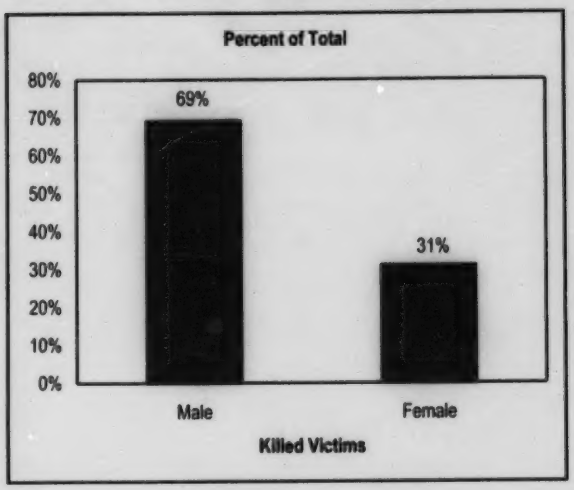


Table 4.07 – Location of most severe injury and injury type

Injury Type	Head	Face/ Nose	Eye	Neck	Chest	Back	Shoulder Upper Arm	Elbow Lower Arm/Hand	Abdomen Pelvis	Hip/Upper Leg	Knee/ Lower Leg/Foot	Entire Body	Unknown	Total
Abrasion	620	316	26	214	128	105	128	398	55	93	364	79	73	2,599
Bruises	1,170	281	28	547	1,147	647	691	528	344	491	1,221	208	113	7,416
Lacerations	986	447	28	59	30	28	51	367	9	20	168	44	28	2,265
Bleeding	546	400	10	47	41	8	21	138	37	9	56	73	14	1,400
Fracture	160	80	4	58	179	52	136	221	67	144	382	144	11	1,638
Dislocation	4	2	0	11	6	31	109	38	6	22	26	3	3	261
Burns	7	3	1	4	8	4	5	12	3	4	2	4	4	61
Amputations	5	4	0	1	1	1	1	7	0	0	3	2	4	29
Concussion	455	9	0	46	32	17	8	4	9	5	4	24	10	623
Drowning	4	0	0	10	2	1	0	0	0	0	0	4	4	25
Whiplash	394	22	7	5,608	222	1,267	197	20	36	28	38	161	91	8,091
Other	51	8	4	19	42	42	12	7	17	5	17	37	46	307
Unknown	281	44	7	485	238	325	124	81	80	71	162	62	1,442	3,402
Total	**4,683**	**1,616**	**115**	**7,109**	**2,076**	**2,528**	**1,483**	**1,821**	**663**	**892**	**2,443**	**845**	**1,843**	**28,117**

Note: Injury type was recorded by the attending police officer and may not be confirmed by medical examination. Non-observable injuries may be based on victim's testimony only.

Table 4.08 – Victims by location of most severe injury

Injury Location	Injured	Killed	Total
Neck	7,090	19	7,109
Head	4,526	157	4,683
Back	2,528	0	2,528
Knee/Lower Leg/Foot	2,443	0	2,443
Chest	2,027	50	2,076
Elbow/Lower Arm/Hand	1,821	0	1,821
Face/Nose	1,610	6	1,616
Shoulder/Upper Arm	1,483	0	1,483
Hip/Upper Leg	892	0	892
Entire Body	696	149	845
Abdomen/Pelvis	657	6	663
Eye	115	0	115
Unknown	1,828	15	1,843
Total	**27,716**	**402**	**28,117**

Table 4.09 – Victims by injury type

Injury Location	Injured	Killed	Total
Whiplash	8,090	1	8,091
Bruises	7,411	5	7,416
Abrasion	2,595	4	2,599
Lacerations	2,245	20	2,265
Fracture	1,461	177	1,638
Bleeding	1,319	81	1,400
Concussion	596	27	623
Other	256	51	307
Dislocation	261	0	261
Burns	58	3	61
Amputations	27	2	29
Drowning	16	9	25
Unknown	3,381	22	3,402
Total	**27,716**	**402**	**28,117**

Note: Injury type was determined by the attending police officer and may not always be confirmed by medical examination.

Drivers in 1999 Collisions

SECTION 5

Drivers licensed to operate in British Columbia totalled 2,733,771 at the end of 1999. The number of drivers licensed in 1999 showed an increase of 1.6% over the previous year.

Driver counts from previous years' publications can not be compared with the revised driver counts in this chapter. Driver counts are calculated using the active driver definition.

Certain age groups are over-represented in traffic collisions. However, note that these comparisons do not take into account differences in the amount of driving done by different age groups. In general, the oldest and youngest age groups drive less than does the mid-age group.

Young drivers (16 to 20) made up only 7.0% of all licensed drivers in 1999, but they accounted for 15.6 of all drivers involved in 1999 collisions.

Older age groups are more likely to be under-represented in both the total driver population and the population of drivers involved in collisions. Drivers over 50 made up 31.7% of the total driver population in 1999, and comprised 20.6% of drivers involved in collisions in 1999.

Finally, drivers between the ages of 21 and 50 made up 61.3% of the total driver population in 1999. They accounted for 63.6% of drivers involved in collisions.

More males were involved in collisions than females in all age categories.

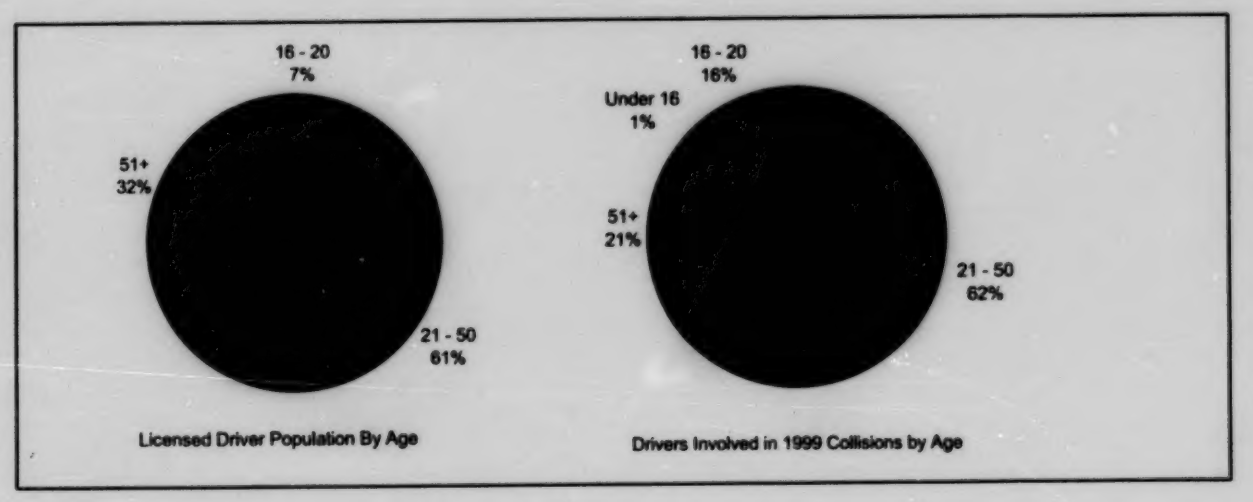


Table 5.01 – Comparison of licensed drivers and drivers involved in injury and fatal collisions by age

	Licensed Drivers	% of Total Driver Population	# of Drivers Involved in Injury and Fatal Collisions	% of Total Drivers Involved in Injury and Fatal Collisions**	% of Age Group Driver Population Involved in Injury and Fatal Collisions***
Under 16*	n/a	0	67	0.22	NA
16	28,261	1.03	547	1.78	1.94
17	37,409	1.37	1,017	3.31	2.72
18	40,475	1.48	1,062	3.45	2.62
19	41,636	1.52	1,148	3.73	2.76
20	42,322	1.55	1,036	3.37	2.45
21	42,652	1.56	898	2.92	2.11
22	43,407	1.59	899	2.92	2.07
23	42,927	1.57	756	2.46	1.76
24	43,620	1.60	724	2.35	1.66
25	45,272	1.66	684	2.22	1.51
26-30	253,954	9.29	3,475	11.29	1.37
31-35	281,415	10.29	3,340	10.86	1.19
36-40	323,881	11.85	3,352	10.89	
41-45	316,009	11.56	2,968	9.65	0.94
46-50	283,266	10.36	2,458	7.99	0.87
51-55	235,308	8.61	1,838	5.97	0.78
56-60	171,351	6.27	1,249	4.06	0.73
61-65	134,409	4.92	924	3.00	0.69
66-70	118,310	4.33	789	2.56	0.67
71-75	96,148	3.52	651	2.12	0.68
76-80	68,759	2.52	525	1.71	0.76
80+	42,980	1.57	361	1.17	0.84
Total	**2,733,771**	**100%**	**30,768**	**100%**	

Note: This report does not include drivers whose age is unknown.

* Includes unlicensed drivers.

** Total number of collision involved drivers in the age group as a percentage of the total number of drivers involved in injury and fatal collisions.

*** Total number of collision involved drivers in the age group as a percentage of the total number of licensed drivers in that age group.

Table 5.02 – Driver age by gender by collision type

	Injury				Fatal				Total Drivers			
Driver Age	Male	Female	Unknown	Total	Male	Female	Unknown	Total	Male	Female	Unknown	Total
9	1	0	0	1	1	0	0	1	2	0	0	2
10	0	1	0	1	0	0	0	0	0	1	0	1
11	2	2	0	4	0	0	0	0	2	2	0	4
12	5	0	0	5	0	0	0	0	5	0	0	5
13	2	1	0	3	0	0	0	0	2	1	0	3
14	12	3	0	15	1	0	0	1	13	3	0	16
15	29	7	0	36	0	0	0	0	29	7	0	36
16	325	214	0	539	4	4	0	8	329	218	0	547
17	645	354	1	1,000	11	6	0	17	656	360	1	1,017
18	698	347	0	1,045	13	4	0	17	711	351	0	1,062
19	750	377	0	1,127	16	5	0	21	766	382	0	1,148
20	692	329	0	1,021	12	3	0	15	704	332	0	1,036
21	605	275	0	880	13	5	0	18	618	280	0	898
22	577	305	0	882	11	6	0	17	588	311	0	899
23	497	248	0	745	9	2	0	11	506	250	0	756
24	462	253	0	715	5	4	0	9	467	257	0	724
25	430	245	0	675	7	2	0	9	437	247	0	684
26-30	2208	1211	0	3,419	45	11	0	56	2,253	1,222	0	3,475
31-35	2127	1163	0	3,290	38	12	0	50	2,165	1,175	0	3,340
36-40	2084	1212	0	3,296	39	17	0	56	2,123	1,229	0	3,352
41-45	1833	1079	0	2,912	47	9	0	56	1,880	1,088	0	2,968
46-50	1545	877	0	2,422	28	8	0	36	1,573	885	0	2,458
51-55	1197	608	0	1,805	27	6	0	33	1,224	614	0	1,838
56-60	872	345	0	1,217	27	5	0	32	899	350	0	1,249
61-65	611	284	0	895	25	4	0	29	636	288	0	924
66-70	514	259	0	773	12	4	0	16	526	263	0	789
71-75	416	223	0	639	11	1	0	12	427	224	0	651
76-80	312	204	0	516	8	1	0	9	320	205	0	525
81-85	161	92	0	253	4	6	0	10	165	98	0	263
86-90	51	20	0	71	3	0	0	3	54	20	0	74
91-95	18	1	0	19	1	0	0	1	19	1	0	20
95+	2	2	0	4	0	0	0	0	2	2	0	4
Unknown	45	19	599	663	0	0	7	7	45	19	606	670
Total	**19,728**	**10,560**	**600**	**30,888**	**418**	**125**	**7**	**550**	**20,146**	**10,685**	**607**	**31,438**

Note: Drivers in this table include all persons operating a motor vehicle, both licensed and unlicensed (including children).

Table 5.03 – BC driver license class by driver type: Drivers involved in injury collisions

Driver License Class	Driver	Motorcycle Driver	Other Driver	Total
000*	371	9	0	380
100	1,033	3	0	1,036
160	261	27	0	288
200	90	1	0	91
230	44	7	0	51
260	18	5	0	23
300	285	1	0	286
340	45	0	0	45
346	26	3	0	29
360	82	16	0	98
400	856	3	0	859
460	117	26	0	143
500	22,155	87	0	22,242
560	1,275	385	0	1,660
600	7	18	0	25
700	1,051	2	0	1,053
800	1	1	0	2
997**	1,249	44	0	1,293
998***	1,216	38	30	1,284
Total	**30,182**	**676**	**30**	**30,888**

Note: "100" to "800" refers to driver licence classes 1 to 8. "340", for example, is a combination of class 3 and class 4.
"Other Driver" refers to drivers of snow mobiles, road construction, mobile cranes etc.
* Indicates 'No Class'. It includes out-of-province drivers.
** Indicates 'Out-Of-Province' drivers.
*** Indicates 'License Class Unknown'. It includes out-of-province drivers.

Table 5.04 – BC driver license class by driver type: Drivers involved in fatal collisions

Driver License Class	Driver	Motorcycle Driver	Other	Total
000*	5	0	0	5
100	37	0	0	37
160	15	1	0	16
200	4	0	0	4
230	1	0	0	1
260	1	0	0	1
300	11	0	0	11
346	0	1	0	1
360	1	0	0	1
400	10	1	0	11
460	2	1	0	3
500	320	7	0	327
560	22	15	0	37
700	16	0	0	16
997**	41	1	0	42
998***	34	1	2	35
Total	**520**	**28**	**2**	**550**

Note: "100" to "800" refers to driver licence classes 1 to 8. "340", for example, is a combination of class 3 and class 4.
"Other Driver" refers to drivers of snow mobiles. road construction, mobile cranes etc
* Indicates 'No Class'. It includes out-of-province drivers.
** Indicates 'Out-Of-Province' drivers.
*** Indicates 'License Class Unknown'. It includes out-of-province drivers.

Vehicles In 1999 Collisions

SECTION 6

This section includes information on all types of vehicles including bicycles, snowmobiles and other off-road vehicles, farm and construction vehicles and others (see Table 6.03 for a complete list).

There were 33,248 vehicles involved in police-attended injury and fatal collisions in 1999, compared to 32,893 vehicles during 1998. Note that if the same vehicle were involved in two or more separate collisions in 1999, it would be counted each time as if it were a different vehicle.

Passenger cars were by far the most frequently involved vehicles in 1999 police attended casualty collisions, accounting for 74.8% of all vehicles involved in collisions. A total of 24,878 passenger cars were involved in 15,899 collisions.

Vehicles driven for personal use comprised 83.4% of the vehicles involved in police-attended casualty collisions. Vehicles used for commercial and business purposes accounted for only 9.0% of the vehicles in collisions.

Stolen vehicles were involved in 103 collisions, 5 of them fatal.

In 1999, there was only one report of a collision involving a vehicle carrying dangerous goods.

Table 6.01 – Number of vehicles involved in collisions by month

Month	Injury	Fatal	Total Vehicles	% of Total
January	2,514	37	2,551	7.67
February	2,410	43	2,453	7.38
March	2,481	46	2,527	7.60
April	2,395	34	2,429	7.31
May	2,554	48	2,602	7.83
June	2,755	46	2,801	8.42
July	2,812	49	2,861	8.61
August	2,902	54	2,956	8.89
September	2,919	46	2,965	8.92
October	3,063	46	3,109	9.35
November	2,798	46	2,844	8.55
December	3,081	69	3,150	9.47
Total	**32,684**	**564**	**33,248**	**100%**

Note: This report includes motor vehicles, bicycles, and miscellaneous unclassified vehicle types.

Table 6.02 – Number of vehicles involved in collisions by vehicle use

Vehicle Use	Injury	Fatal	Total	% of Total
Personal	27,298	431	27,729	83.40
Business/Commercial	2,873	101	2,974	8.94
Parked	905	6	911	2.74
Recreational	429	8	437	1.31
Taxi	256	0	256	0.77
Emergency	141	3	144	0.43
Stolen	98	5	103	0.31
Farm Use	94	0	94	0.28
Government	43	2	45	0.14
Towing/Towed	14	0	14	0.04
Driver Training Facility	3	0	3	0.01
Military	3	0	3	0.01
Other	69	2	71	0.21
Unknown	458	6	464	1.40
Total	**32,684**	**564**	**33,248**	**100%**

Note: This report includes motor vehicles, bicycles, and miscellaneous unclassified vehicle types.

Table 6.03 – Collisions by vehicle type

Vehicle Type	Injury	Fatal	Total
Passenger Car	15659	240	15,899
Single Unit Truck/ Light	4261	108	4,369
Bicycle	890	8	898
Motorcycle	630	26	656
Single Unit Truck/ Heavy*	355	23	378
Tractor Trailer	247	27	274
Tractor Trailer & Pup	160	15	175
Truck & Camper	164	5	169
Local Transit Bus	115	4	119
Car & Trailer	95	4	99
Truck/ Camper & Trailer	69	1	70
Motor Home	66	3	69
Heavy Truck/Trailer	62	3	65
Light Truck/Trailer	51	3	54
Logging Truck & Pole Trl	44	4	48
Tow Truck	46	2	48
School Bus	31	0	31
Intercity Bus	25	3	28
Moped	24	0	24
Trailer Only	9	0	9
Snow Mobile	7	2	9
Farm Vehicle	8	0	8
Motor Home/Trailer	5	1	6
General Construction	6	0	6
Road Construction	5	0	5
All-Terrain Cycle	4	0	4
Mobile Crane	3	0	3
Dune Buggy	2	0	2
Trail Bike	1	0	1
Mini Bike	1	0	1
4 Wheel Drive Vehicle	1	0	1
Other	51	3	54
Unknown	53	3	56

* These vehicles are defined as weighing 10,900 kg or over.

Note: This report includes motor vehicles, bicycles, and miscellaneous unclassified vehicle types.

The purpose of the above table is to illustrate the occurrences of particular vehicle types in collisions. As the table is counting "collisions" rather than "vehicles" (please see Table 6.04 for a vehicle count), some double counting of collisions occurs in the data. For example, a two vehicle fatal collision involving a passenger car and a logging truck will be counted above as both a fatal passenger car collision, and a fatal logging truck collision.

Table 6.04 – Number of Vehicles involved in collisions by Vehicle type

Vehicle Type	Injury	Fatal	Total Vehicles	% of Total
Passenger Car	24,575	303	24,878	74.83
Single Unit Truck/ Light	4,793	118	4,911	14.77
Bicycle	893	8	901	2.71
Motorcycle	647	28	675	2.03
Single Unit Truck/ Heavy*	366	23	389	1.17
Tractor Trailer*	258	27	285	0.86
Tractor Trailer & Pup*	170	16	186	0.56
Truck & Camper	178	5	183	0.55
Local Transit Bus	117	4	121	0.36
Car & Trailer	101	4	105	0.32
Truck/ Camper & Trailer	72	1	73	0.22
Motor Home	66	3	69	0.21
Heavy Truck/Trailer*	64	3	67	0.20
Light Truck/Trailer	52	3	55	0.17
Logging Truck & Pole Trl	44	4	48	0.14
Tow Truck	46	2	48	0.14
School Bus	31	0	31	0.09
Intercity Bus	25	3	28	0.08
Moped	24	0	24	0.07
Trailer Only	9	0	9	0.03
Snow Mobile	7	2	9	0.03
Farm Vehicle	8	0	8	0.02
Motor Home/Trailer	5	1	6	0.02
Road Construction	6	0	6	0.02
General Construction	6	0	6	0.02
All-Terrain Cycle	4	0	4	0.01
Mobile Crane	3	0	3	0.01
Dune Buggy	2	0	2	0.01
Trail Bike	2	0	2	0.01
Mini Bike	1	0	1	0.00
4 Wheel Drive Vehicle	1	0	1	0.00
Other	51	3	54	0.16
Unknown	57	3	60	0.18
Total	**32,684**	**564**	**33,248**	**100%**

* These vehicles are defined as weighing 10,900 kg or over.

Note: This report includes motor vehicles, bicycles, and miscellaneous unclassified vehicle types.

Table 6.05 – Vehicles involved in collisions by vehicle use and type

	Vehicle Use															
Vehicle Type	**Parked**	**Personal**	**Business/ Com-mercial**	**Driver Training Facility**	**Recrea-tional**	**Emer-gency**	**Military**	**Taxi**	**Farm Use**	**Govern-ment**	**Towing / Towed**	**Stolen**	**Carrying Poisonous Infectious**	**Other**	**Unknown**	**Total**
Passenger Car	701	22,371	960	2	17	106	0	253	8	28	0	84	0	38	311	24,879
Car & Trailer	1	95	5	0	1	1	0	0	1	0	1	0	0	0	0	105
Single Unit Truck/ Light	146	3,715	837	0	2	15	2	3	61	8	3	16	0	18	84	4,910
Single Unit Truck/ Heavy	11	73	274	0	1	12	1	0	8	5	0	2	0	1	2	390
Light Truck/Trailer	2	22	25	0	1	2	0	0	2	0	0	0	0	1	0	55
Heavy Truck/Trailer	3	2	62	0	0	0	0	0	0	0	0	0	0	0	0	67
Tractor Trailer	10	1	272	0	1	0	0	0	1	0	0	0	0	0	0	285
Tractor Trailer & Pup	5	2	179	0	0	0	0	0	0	0	0	0	0	0	0	186
Logging Truck & Pole Trl	1	0	46	0	0	0	0	0	0	0	0	0	0	1	0	48
Tow Truck	1	0	36	0	0	0	0	0	0	1	10	0	0	0	0	48
School Bus	0	0	28	0	0	0	0	0	2	1	0	0	0	0	0	31
Local Transit Bus	2	0	119	0	0	0	0	0	0	0	0	0	0	0	0	121
Intercity Bus	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	28
Motorcycle	2	647	2	1	16	4	0	0	0	1	0	1	0	0	1	675
Moped	0	12	4	0	8	0	0	0	0	0	0	0	0	0	0	24
Bicycle	2	533	5	0	353	2	0	0	0	0	0	0	0	0	5	900
Truck & Camper	3	130	43	0	2	0	0	0	2	1	0	0	0	0	2	183
Truck/ Camper & Trailer	1	52	14	0	1	0	0	0	3	0	0	0	0	0	2	73
Motor Home	6	47	2	0	14	0	0	0	0	0	0	0	0	0	0	69
Motor Home/Trailer	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Trailer Only	7	1	1	0	0	0	0	0	0	0	0	0	0	0	0	9
Snow Mobile	0	1	0	0	8	0	0	0	0	0	0	0	0	0	0	9
Dune Buggy	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Trailer Bike	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Mini Bike	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4 Wheel Drive Vehicle	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
All-Terrain Cycle	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Farm Vehicle	0	0	1	0	0	0	0	0	6	0	0	0	1	0	0	8
Road Construction	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
General Construction	1	0	5	0	0	0	0	0	0	0	0	0	0	0	0	6
Mobile Crane	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3
Other	0	16	17	0	4	2	0	0	0	0	0	0	0	11	4	54
Unknown	3	3	1	0	0	0	0	0	0	0	0	0	0	0	53	60
Total	**911**	**27,729**	**2,974**	**3**	**437**	**144**	**3**	**256**	**94**	**45**	**14**	**103**	**1**	**70**	**464**	**33,248**

Occupant Restraint Use In 1999 Collisions SECTION 7

The use of seat belts by motor vehicle drivers and passengers has been mandatory in British Columbia since 1977. In March 1985, child restraint legislation was passed, making it compulsory for children 18 kg and under to be secured in an approved child restraint. In 1999, of the 4 reported vehicle passengers killed in the age group 5 and under, three were riding in vehicles without the use of passenger restraints and one was in a child restraint.

The tables and graphs in this section strongly indicate the effectiveness of safety restraints in reducing casualties. In 1999, 79.9% of the drivers involved in casualty collisions who did not use restraints were injured or killed, while 50.4% of those who used the standard lap and harness restraint system were injured.

Similarly, among vehicle passengers involved in casualty collisions, 73.7% of those not using a restraint were injured or killed compared to 50.4% using the standard lap and harness assembly. Among passengers in child restraints, only 19.8% were injured. Note that these data include only casualty collisions (those in which at least one person was killed or injured). Therefore the data do not address the overall effectiveness of safety devices in preventing injury across all levels of crash severity.

Statistics on occupants ejected from vehicles show that ejection carries a very high risk of injury or death. Among ejected or partially ejected drivers, 9% were killed and another 88% were injured. The risk of death or injury was similar for ejected passengers.

Air bag deployment has been tracked for several years in British Columbia, but occurrences of air bag deployment have likely been under-reported. In 1999, 398 air bag deployments were reported. Of the 398 drivers and 132 passengers whose air bag deployed, 1 driver and no passengers were killed.

Table 7.01 – Type of restraint used by drivers in 1999

Safety Equipment	Not Injured	Injured	Killed	Total	% of Total
Lap & Harness	11,887	11,995	101	23,983	78.15
Unknown	2,729	1,399	16	4,144	13.50
Lap Belt Only	323	248	3	574	1.87
No Restraint Used	284	1,058	74	1,416	4.61
Air Bag	95	302	1	398	1.30
Vehicle Not Equipped	55	52	0	107	0.35
Harness Only	27	39	0	66	0.22
Total	**15,400**	**15,093**	**195**	**30,688**	**100**

Note: Form only allows one type of restraint to be coded, making Air Bag category difficult to interpret.

Table 7.02 – Type of restraint used by passengers in 1999

Safety Equipment	Not Injured	Injured	Killed	Total	% of Total
Lap & Harness	5,924	5,985	36	11,945	66.05
Lap Belt Only	966	849	5	1,820	10.06
Child Restraint	576	141	1	718	3.97
No Restraint Used	395	1,061	47	1,503	8.31
Vehicle Not Equipped	97	141	0	238	1.32
Harness Only	34	32	0	66	0.36
Air Bag	34	98	0	132	0.73
Unknown	871	782	11	1,664	9.20
Total	**8,897**	**9,089**	**100**	**18,086**	**100**

Note: Form only allows one type of restraint to be coded, making Air Bag category difficult to interpret.

Table 7.03 – Restraint use by victims injured in collisions by position in vehicle

Safety Equipment	Driver	Front Seat Center	Front Seat Right	Back Seat Left	Back Seat Center	Back Seat Right	In the Cargo Area	Hanging on Outside	Other	Unknown	Total	% of Total
Lap & Harness	11,995	471	4,179	512	86	630	63	0	7	37	17,980	74.35
No Restraint Used	1,058	124	494	122	78	144	55	12	16	16	2,119	8.76
Lap Belt Only	248	92	110	201	132	279	24	0	0	11	1,097	4.54
Air Bag	302	11	81	0	1	2	0	0	1	2	400	1.65
Vehicle Not Equipped	52	13	31	10	7	11	37	3	24	5	193	0.80
Child Restraint	0	2	21	30	43	41	2	0	0	2	141	0.58
Harness Only	39	3	13	4	3	6	3	0	0	0	71	0.29
Unknown	1,399	72	383	89	42	85	38	30	10	33	2,181	9.02
Total	**15,093**	**788**	**5,312**	**968**	**392**	**1,198**	**222**	**45**	**58**	**106**	**24,182**	**100%**

Note: Form only allows one type of restraint to be coded, making Air Bag category difficult to interpret.

Table 7.04 – Restraint use by victims killed in collisions by position in vehicle

Safety Equipment	Driver	Front Seat Center	Front Seat Right	Back Seat Center	Back Seat Right	Back Seat Left	In the Cargo Area	Riding on Outside	Other	Unknown	Total	% of Total
Lap & Harness	101	1	33	0	2	0	0	0	0	0	137	46.44
No Restraint Used	74	1	19	5	5	6	8	1	1	1	121	41.02
Lap Belt Only	3	0	1	0	0	4	0	0	0	0	8	2.71
Air Bag	1	0	0	0	0	0	0	0	0	0	1	0.34
Child Restraint	0	0	1	0	0	0	0	0	0	0	1	0.34
Unknown	16	1	5	1	3	0	0	0	1	0	27	9.15
Total	**195**	**3**	**59**	**6**	**10**	**10**	**8**	**1**	**2**	**1**	**295**	**100%**

Note: Form only allows one type of restraint to be coded, making Air Bag category difficult to interpret.

Table 7.05 – Driver age by restraint use for drivers injured in 1999

Driver Age	Vehicle Not Equipped	No Restraint Used	Lap Belt Only	Harness Only	Lap & Harness	Air Bag	Unknown	Total	% of Total
9	1	0	0	0	0	0	0	1	0.01
11	0	0	1	0	1	0	0	2	0.01
12	0	0	0	0	1	0	0	1	0.01
13	0	0	0	0	1	0	0	1	0.01
14	0	1	0	0	2	0	1	4	0.03
15	1	3	2	0	12	0	4	22	0.15
16	3	22	3	1	209	2	20	260	1.72
17	1	46	5	3	390	14	31	490	3.25
18	1	56	7	1	400	15	51	531	3.52
19	1	66	14	3	449	15	40	588	3.90
20	1	49	7	1	416	12	50	536	3.55
21	0	46	8	1	366	12	33	466	3.09
22	1	53	8	0	353	8	42	465	3.08
23	2	40	2	1	314	7	35	401	2.66
24	2	28	11	0	282	5	36	364	2.41
25	0	25	7	1	287	7	43	370	2.45
26-30	6	146	22	5	1,387	34	179	1,779	11.79
31-35	7	108	35	1	1,295	39	154	1,639	10.86
36-40	9	102	27	7	1,270	23	161	1,599	10.59
41-45	2	71	20	4	1,131	32	140	1,400	9.28
46-50	3	60	23	4	948	19	106	1,163	7.71
51-55	2	41	9	3	692	15	79	841	5.57
56-60	2	19	12	0	485	9	44	571	3.78
61-65	1	16	8	2	330	9	33	399	2.64
66-70	1	9	7	0	327	5	31	380	2.52
71-75	2	9	2	0	246	8	23	290	1.92
76-80	0	7	4	0	215	10	11	247	1.64
81-85	2	4	1	1	115	2	9	134	0.89
86-90	0	1	2	0	32	0	2	37	0.25
91-95	0	1	0	0	11	0	0	12	0.08
95+	0	0	0	0	2	0	1	3	0.02
Unknown	1	29	1	0	26	0	40	97	0.64
Total	**52**	**1,058**	**248**	**39**	**11,995**	**302**	**1,399**	**15,093**	**100%**

Note: Form only allows one type of restraint to be coded, making Air Bag category difficult to interpret.

Figure 7.01 – Restraint use by drivers injured in 1999

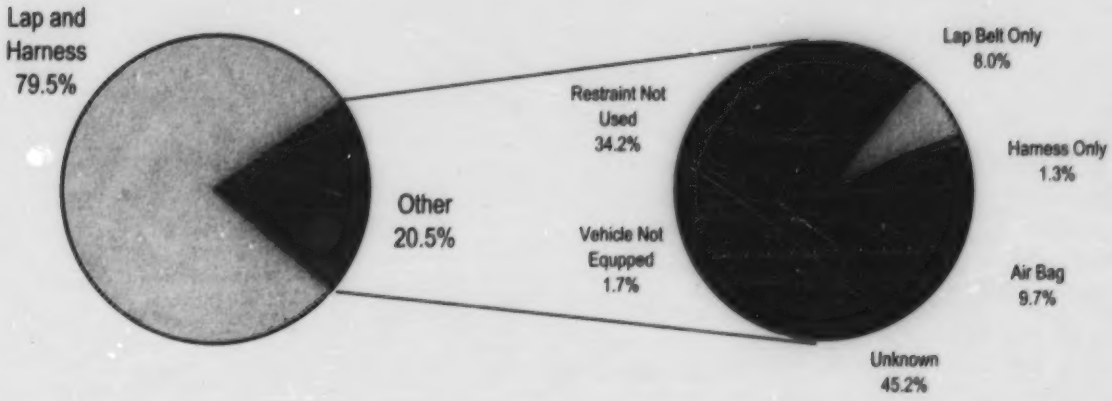


Table 7.06 – Driver age by restraint use for drivers killed in 1999

Driver Age	No Restraint Used	Lap Belt Only	Lap & Harness	Air Bag	Unknown	Total	% of Total
14	1	0	0	0	0	1	0.51
16	3	0	0	0	0	3	1.54
17	3	0	6	0	0	9	4.62
18	2	0	6	0	1	9	4.62
19	3	0	4	0	2	9	4.62
20	0	0	2	1	0	3	1.54
21	0	0	3	0	1	4	2.05
22	6	0	6	0	0	12	6.15
23	3	0	1	0	1	5	2.56
24	1	0	0	0	0	1	0.51
25	1	0	0	0	0	1	0.51
26-30	8	0	9	0	0	17	8.72
31-35	8	1	6	0	2	17	8.72
36-40	7	0	8	0	3	18	9.23
41-45	5	0	9	0	2	16	8.21
46-50	3	0	4	0	1	8	4.10
51-55	6	0	4	0	0	10	5.13
56-60	5	0	5	0	1	11	5.64
61-65	3	1	11	0	0	15	7.69
66-70	2	0	3	0	1	6	3.08
71-75	2	0	3	0	1	6	3.08
76-80	2	1	3	0	0	6	3.08
81-85	0	0	6	0	0	6	3.08
86-90	0	0	2	0	0	2	1.03
Total	**74**	**3**	**101**	**1**	**16**	**195**	**100**

Note: Form only allows one type of restraint to be coded, making Air Bag category difficult to interpret.

Figure 7.02 – Restraint use by drivers killed in 1999

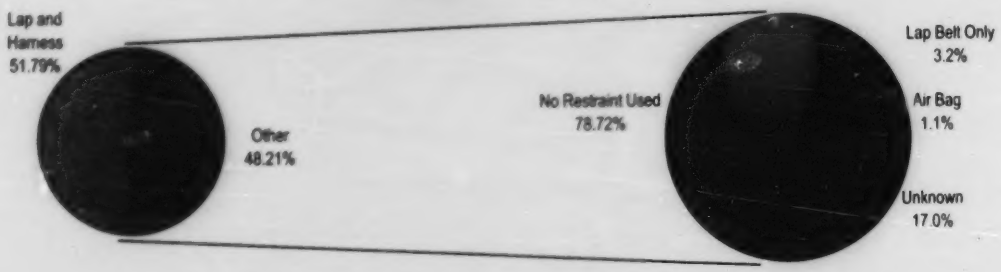
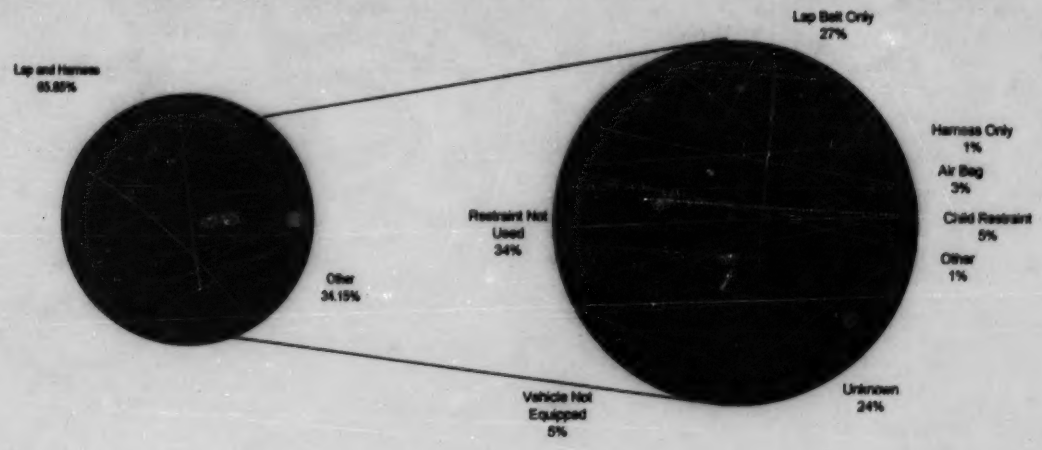


Table 7.07 – Passenger age by restraint use for passengers injured in 1999

Passenger Age	Vehicle Not Equipped	No Restraint Used	Lap Belt Only	Harness Only	Lap & Harness	Air Bag	Child - Restraint	Other	Unknown	Total	% of Total
1	0	5	4	1	8	0	50	0	0	68	0.75
2	0	4	5	0	15	0	34	0	1	59	0.65
3	2	4	12	0	21	0	24	0	2	65	0.72
4	1	5	21	1	46	2	13	0	4	93	1.02
5	1	6	14	0	50	0	6	0	2	79	0.87
6	0	8	16	0	50	0	3	0	7	84	0.92
7	0	7	23	0	45	1	0	0	5	81	0.89
8	0	4	25	1	70	0	1	0	2	103	1.13
9	1	7	21	3	45	0	0	0	3	80	0.88
10	1	7	22	1	76	1	1	0	2	111	1.22
11	1	9	17	0	57	0	0	0	6	90	0.99
12	1	4	20	0	69	0	0	0	8	102	1.12
13	1	14	22	0	69	0	0	0	8	114	1.25
14	2	23	17	0	79	1	0	0	16	138	1.52
15	6	55	26	2	127	2	0	0	17	235	2.59
16	8	67	54	1	275	5	0	1	35	446	4.91
17	9	82	71	2	267	8	0	0	43	482	5.30
18	2	71	44	1	255	3	0	0	36	412	4.53
19	5	65	34	1	241	4	0	0	32	382	4.20
20	8	49	22	4	209	6	0	0	30	328	3.61
21	4	31	28	1	148	4	0	2	21	239	2.63
22	7	45	8	0	139	2	0	1	15	217	2.39
23	2	30	11	0	133	3	0	0	13	192	2.11
24	0	24	7	0	120	3	0	1	14	169	1.86
25	1	21	16	1	117	3	0	0	15	174	1.91
26-30	12	86	38	2	477	4	0	1	43	661	7.27
31-35	8	69	41	0	296	2	0	6	30	454	5.00
36-40	10	34	30	2	322	5	0	0	33	436	4.80
41-45	10	43	23	1	278	2	0	3	24	384	4.22
46-50	2	28	15	0	274	4	0	1	22	346	3.81
51-55	6	23	17	1	193	2	0	1	22	265	2.92
56-60	6	6	16	1	160	7	0	0	13	209	2.30
61-65	1	7	7	1	150	0	0	1	7	174	1.91
66-70	1	4	16	0	155	2	0	0	11	189	2.08
71-75	0	10	2	0	128	3	0	2	4	149	1.64
76-80	2	5	5	1	93	2	0	0	4	112	1.23
81-85	1	2	3	0	45	0	0	0	4	55	0.61
86-90	0	1	4	0	17	0	0	0	2	24	0.26
91-95	0	0	1	0	6	0	0	0	0	7	0.08
95+	0	0	0	0	2	0	0	0	0	2	0.02
Unknown	19	96	73	3	656	17	9	7	199	1,079	11.87
Total	141	1,091	849	32	5,995	98	141	27	755	9,089	100

Note: Form only allows one type of restraint to be coded, making Air Bag category difficult to interpret.

Figure 7.03 – Restraint use by passengers injured in 1999



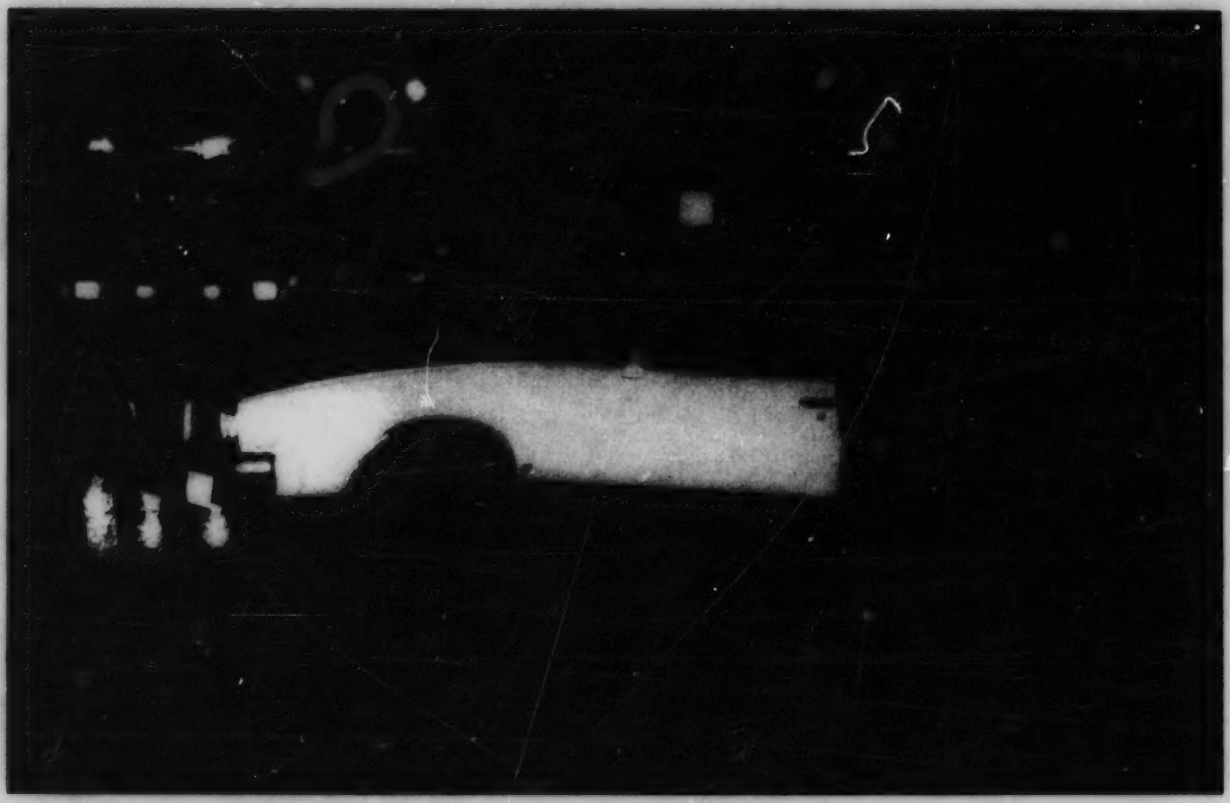


Table 7.08 – Passenger age by restraint use for passengers killed in 1999

Passenger Age	No Restraint Used	Lap Belt Only	Lap & Harness	Child Restraint	Unknown	Total	% of Total
1	1	0	0	1	0	2	2.00
3	1	0	0	0	0	1	1.00
5	1	0	0	0	0	1	1.00
7	0	1	0	0	0	1	1.00
8	1	0	0	0	0	1	1.00
9	1	0	0	0	0	1	1.00
13	1	0	0	0	0	1	1.00
14	0	0	0	0	1	1	1.00
15	3	1	0	0	2	6	6.00
16	4	0	0	0	0	4	4.00
17	3	0	4	0	0	7	7.00
18	2	0	0	0	0	2	2.00
19	7	1	0	0	0	8	8.00
20	2	0	1	0	0	3	3.00
21	0	1	0	0	1	2	2.00
23	0	0	2	0	0	2	2.00
24	0	0	0	0	1	1	1.00
25	2	0	0	0	0	2	2.00
26-30	1	0	3	0	1	5	5.00
31-35	2	0	1	0	0	3	3.00
36-40	3	0	1	0	2	6	6.00
41-45	3	0	0	0	0	3	3.00
46-50	1	0	3	0	0	4	4.00
51-55	2	0	1	0	0	3	3.00
56-60	1	0	3	0	1	5	5.00
61-65	2	0	2	0	0	4	4.00
66-70	3	0	1	0	1	5	5.00
71-75	0	0	5	0	0	5	5.00
76-80	0	1	2	0	0	3	3.00
81-85	0	0	6	0	0	6	6.00
86-90	0	0	0	0	1	1	1.00
91-95	0	0	1	0	0	1	1.00
Total	**47**	**5**	**36**	**1**	**11**	**100**	**100%**

Figure 7.04 – Restraint use by passengers killed in 1999

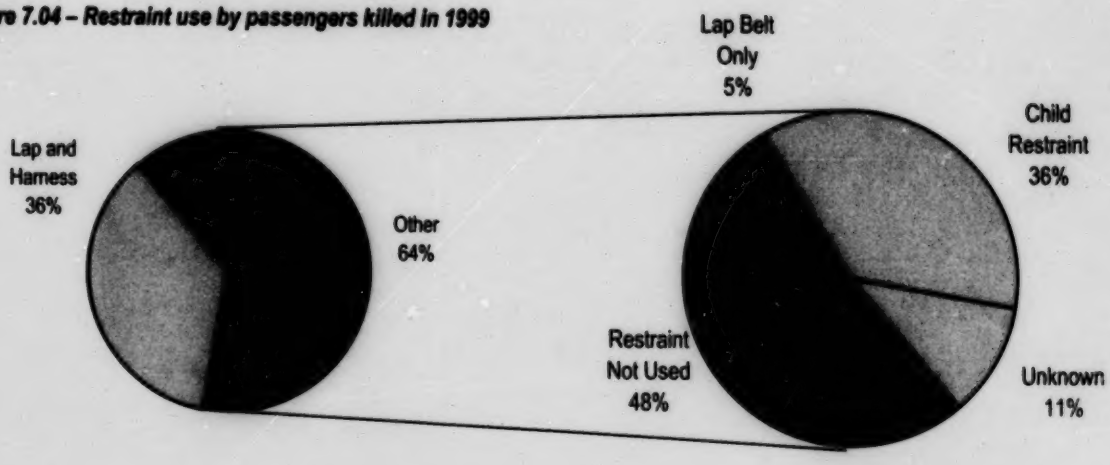


Table 7.09 – Ejection of drivers and injury outcome

Ejection	Not Injured	Injured	Killed	Total
Not Ejected	15,371	14,876	150	30,397
Partially Ejected	5	67	13	85
Ejected	8	115	31	154
Unknown	16	35	1	52
Total	**15,400**	**15,093**	**195**	**30,688**

Note: In previous years this table included motorcycles, snowmobiles etc.

Table 7.10 – Ejection of passengers and injury outcome

Ejection	Not Injured	Injured	Killed	Total
Not Ejected	8,853	8,786	66	17,705
Partially Ejected	14	77	8	99
Ejected	10	160	24	194
Unknown	18	43	2	63
Not Applicable	2	23	0	25
Total	**8,897**	**9,089**	**100**	**18,086**

Table 7.11 – Restraint use and occupant ejection*

Safety Equipment	Not Ejected	Partially Ejected	Ejected	NA	Unknown	Total
Unknown	5,670	19	25	0	64	5,778
Vehicle Not Equipped	311	10	18	0	6	345
No Restraint Used	2,561	100	245	0	13	2,919
Lap Belt Only	2371	9	9	0	5	2,394
Harness Only	131	0	1	0	0	132
Lap & Harness	35,817	43	43	0	26	35,929
Air Bag	527	1	1	0	1	530
Child Restraint	713	0	5	0	0	718
Not Applicable	2	2	1	25	0	30
Total	**48,103**	**184**	**348**	**25**	**115**	**48,775**

*Includes occupants injured, killed and not injured.

Note: 1. NA means Not Applicable;

2. Form only allows one type of restraint to be coded, making Air Bag category difficult to interpret.

Table 7.12 – Restraint use by victims injured by vehicle type in 1999

Vehicle Type	Vehicle Not Equipped	No Restraint Used	Lap Belt Only	Harness Only	Lap & Harness	Air Bag	Child - Restraint	Unknown	Total
Passenger Car	87	1,503	841	60	15,323	367	130	1,711	20,022
Car & Trailer	0	9	2	0	74	1	0	5	91
Single Unit Truck/ Light	25	479	189	8	2,138	28	11	319	3,197
Single Unit Truck/ Heavy	4	25	13	0	95	0	0	30	167
Light Truck/Trailer	1	5	1	0	27	0	0	2	36
Heavy Truck/Trailer	0	2	1	0	9	0	0	6	18
Tractor Trailer	1	26	11	1	64	0	0	21	124
Tractor Trailer & Pup	3	11	2	1	54	0	0	10	81
Logging Truck & Pole Trailer	0	8	5	0	9	0	0	8	30
Tow Truck	0	3	0	0	5	0	0	4	12
School Bus	5	5	3	0	5	0	0	10	28
Local Transit Bus	36	5	4	0	10	0	0	14	69
Intercity Bus	19	3	2	0	6	0	0	12	42
Truck & Camper	0	17	15	0	92	4	0	11	139
Truck/ Camper & Trailer	0	3	0	0	23	0	0	3	29
Motor Home	2	8	5	0	29	0	0	2	46
Motor Home/Trailer	0	3	1	0	1	0	0	0	5
Trailer Only	0	0	0	0	1	0	0	0	1
Dune Buggy	2	0	1	0	0	0	0	0	3
Farm Vehicle	2	0	0	0	0	0	0	1	3
Road Construction	0	0	1	0	0	0	0	0	1
General Construction	3	0	0	0	1	0	0	0	4
Mobile Crane	1	1	0	0	0	0	0	0	2
Other	2	0	0	0	6	0	0	9	17
Unknown	0	3	0	1	7	0	0	3	14
Total	**193**	**2,119**	**1,897**	**71**	**17,979**	**400**	**141**	**2,191**	**24,191**

Note: Form only allows one type of restraint to be coded, making Air Bag category difficult to interpret.

Table 7.13 – Restraint use by victims killed by vehicle type in 1999

Vehicle Type	No Restraint Used	Lap Belt Only	Lap & Harness	Air Bag	Child - Restraint	Unknown	Total
Passenger Car	80	5	108	1	1	18	213
Car & Trailer	0	0	1	0	0	0	1
Single Unit Truck/ Light	32	2	24	0	0	5	63
Single Unit Truck/ Heavy	1	0	2	0	0	1	4
Light Truck/Trailer	0	0	0	0	0	1	1
Tractor Trailer	2	0	0	0	0	1	3
Tractor Trailer & Pup	3	0	1	0	0	1	5
Logging Truck & Pole Trailer	1	0	0	0	0	0	1
Truck & Camper	2	0	1	0	0	0	3
Motor Home	0	1	0	0	0	0	1
Total	**121**	**8**	**137**	**1**	**1**	**27**	**295**

Note: Form only allows one type of restraint to be coded, making Air Bag category difficult to interpret.

Environmental Conditions and Collision Context in 1999 SECTION 8

The environmental conditions that are reported in police attended casualty collisions do not vary greatly from year to year. Environmental factors were reported to be a contributing factor in 13.6% of the collisions in which factors were reported in 1999. This figure is close to the 13.1% of collisions in 1998 in which environmental factors were reported.

In general, the degree to which certain environmental conditions are represented in collisions reflects the degree to which these conditions are found in the overall environment. For example, the majority of collisions occur on asphalt roads because asphalt is the predominant road surface in the province.

In 1999, of the 18,547 casualty collisions, 95.9% occurred on asphalt roads; 61.1% happened in daylight; 59.6% took place on dry road surfaces and 44.9% occurred under clear weather conditions.

More than half of the 1999 injury collisions took place in urban residential areas or business or shopping districts. These two areas accounted for 59.2% of all 1999 collisions. However, for fatal collisions, about 38.5% occurred in agricultural or undeveloped areas while urban residential and business or shopping districts together accounted for 28.0% of the fatal collisions.

More than one half of all casualty collisions took place on roads where the posted speed limit is 50 km/h. This is likely because a 50 km/h speed limit applies to the largest distance of roads in the province. Speed limits of 80 km/h and greater accounted for 16.6% of all injury collisions and 46.5% of all fatal collisions.

In 1999, 54.7% of all casualty collisions occurred in locations without traffic control devices and 18.9% of these collisions took place at intersections. Locations with illuminated traffic signals accounted for 19.4% of all 1999 casualty collisions and locations with stops signs accounted for 13.9%.

Table 8.01 – Collisions by road surface type

Road Type	Injury	Fatal	Total	% of Total
Asphalt	17,453	332	17,785	95.89
Gravel	400	25	425	2.29
Concrete	136	4	140	0.75
Earth	43	2	45	0.24
Wood	13	0	13	0.07
Oiled Gravel	9	1	10	0.05
Brick/Stone	9	0	9	0.05
Other	9	1	10	0.05
Unknown	110	0	110	0.59
Total	**18,182**	**365**	**18,547**	**100%**

Table 8.02 – Collisions by roadway surface condition

Road Surface	Injury	Fatal	Total	% of Total
Dry	10,837	220	11,057	59.62
Wet	6,007	98	6,105	32.92
Ice	604	17	621	3.35
Snow	350	14	364	1.96
Slush	220	11	231	1.25
Muddy	23	2	25	0.13
Other	17	1	18	0.10
Unknown	124	2	126	0.68
Total	**18,182**	**365**	**18,547**	**100%**

Table 8.03 – Collisions by lighting condition

Light	Injury	Fatal	Total	% of Total
Daylight	11,149	180	11,329	61.08
Dawn	311	14	325	1.75
Dusk	687	17	704	3.80
Dark/Full Illumination	1,721	27	1,748	9.42
Dark/No Illumination	1,479	70	1,549	8.35
Dark/Some Illumination	2,700	51	2,751	14.83
Other	1	1	2	0.01
Unknown	134	5	139	0.75
Total	**18,182**	**365**	**18,547**	**100%**

Table 8.04 – Collisions by weather condition

Weather	Injury	Fatal	Total	% of Total
Clear	8,153	168	8,321	44.86
Cloudy	5,248	117	5,365	28.93
Raining	3,787	49	3,836	20.68
Snowing	532	21	553	2.98
Fog	242	5	247	1.33
Strong Wind	30	0	30	0.16
Hail	22	0	22	0.12
Smog/Smoke	8	0	8	0.04
Other	7	1	8	0.04
Unknown	153	4	157	0.85
Total	**18,182**	**365**	**18,547**	**100%**

Table 8.05 – Collisions by land usage

Land Use	Injury	Fatal	Total	% of Total
Urban Residential	5,778	54	5,832	31.44
Business / Shopping	5,085	49	5,134	27.68
Agricultural / Undeveloped	2,417	128	2,545	13.72
Rural Residential	2,002	84	2,086	11.25
Industrial / Manufacturing	1,006	19	1,025	5.53
Apartment Residential	829	10	839	4.52
School/Playground	427	6	433	2.33
Recreational / Park / Camping	367	12	379	2.04
Other	43	2	45	0.24
Unknown	228	1	229	1.23
Total	**18,182**	**365**	**18,547**	**100%**

Table 8.06 – Collisions by collision location

Collision Location	Injury	Fatal	Total	% of Total
At intersection	8,440	86	8,526	45.97
Between Intersection:Exchanges	6,782	225	7,007	37.78
Intersection of Road & Driveway or Alley	985	10	995	5.36
Off Highway	500	16	516	2.78
Parking Lot:Single/Multilevel	391	0	391	2.11
Bridge	281	11	292	1.57
Exit Ramp	101	1	102	0.55
Entrance Ramp	101	0	101	0.54
Entrance Intersection	64	0	64	0.35
Railroad crossing	44	2	46	0.25
Entrance Acceleration Lane	45	0	45	0.24
Exit Intersection	28	2	30	0.16
Industrial Road	28	2	30	0.16
Exit Deceleration lane	20	0	20	0.11
Transit -Express Lane	14	1	15	0.08
Tunnel	11	0	11	0.06
Ferry or Dock	5	1	6	0.03
Other	127	7	134	0.72
Unknown	215	1	216	1.16
Total	**18,182**	**365**	**18,547**	**100%**

Table 8.07 – Collisions by road jurisdiction

Road Jurisdiction	Injury	Fatal	Total	% of Total
Provincial Highway	5,221	214	5,435	29.30
City/Municipal Street	12,096	113	12,209	65.83
Rural Road	865	38	903	4.87
Total	**18,182**	**365**	**18,547**	**100%**

Table 8.08 – Collisions by posted speed limit

Speed	Injury	Fatal	Total Collisions	% of Fatal Collisions	% of Total
Posted at 10 km/hr	39	0	39	0.00%	0.21
Posted at 20 km/hr	58	2	60	3.33%	0.32
Posted at 30 km/hr	286	1	287	0.35%	1.55
Posted at 40 km/hr	88	0	88	0.00%	0.47
Posted at 50 km/hr	9,730	112	9,842	1.14%	53.07
Posted at 60 km/hr	1,923	35	1,958	1.79%	10.56
Posted at 70 km/hr	406	11	417	2.64%	2.25
Posted at 80 km/hr	1,339	58	1,397	4.15%	7.53
Posted at 90 km/hr	760	49	809	6.06%	4.36
Posted at 100 km/hr	710	53	763	6.95%	4.11
Posted at 110 km/hr	170	5	175	2.86%	0.94
Advisory - 10 km/hr	17	0	17	0.00%	0.09
Advisory - 20 km/hr	25	0	25	0.00%	0.13
Advisory - 30 km/hr	114	2	116	1.72%	0.63
Advisory - 40 km/hr	68	2	70	2.86%	0.38
Advisory - 50 km/hr	1,037	11	1,048	1.05%	5.65
Advisory - 60 km/hr	100	6	106	5.66%	0.57
Advisory - 70 km/hr	17	3	20	15.00%	0.11
Advisory - 80 km/hr	23	4	27	14.81%	0.15
Advisory - 100 km/hr	1	0	1	0.00%	0.01
Special - 10 km/hr	6	0	6	0.00%	0.03
Special - 20 km/hr	12	0	12	0.00%	0.06
Special - 30 km/hr	16	0	16	0.00%	0.09
Special - 40 km/hr	2	0	2	0.00%	0.01
Special - 50 km/hr	24	2	26	7.69%	0.14
Special - 60 km/hr	8	0	8	0.00%	0.04
Special - 70 km/hr	1	0	1	0.00%	0.01
Special - 80 km/hr	8	1	9	11.11%	0.05
Other	84	3	87	3.45%	0.47
Unknown	1,110	5	1,115	0.45%	6.01
Total	**18,182**	**365**	**18,547**	**1.97%**	**100%**

Figure 8.01 - Proportion of fatal to total casualty collisions by posted speed limit

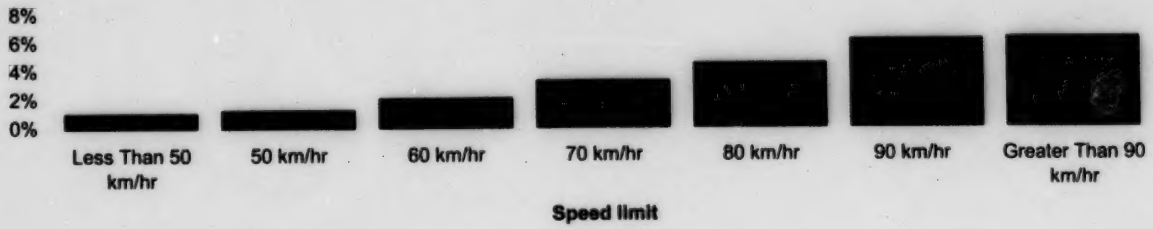


Table 8.09 – Collisions by traffic control device

Control Device	Injury	Fatal	Total	% of Total
None	9,876	276	10,152	54.74
Traffic Signal	3,562	31	3,593	19.37
Stop Sign	2,546	23	2,569	13.85
Not Applicable	891	16	907	4.89
Yield Sign	234	4	238	1.28
Flashing Signal	181	2	183	0.99
Traffic Signal with Advance Flashers	154	3	157	0.85
Lane Use Turn Control Sign	96	2	98	0.53
Officer/Flagman/School Guard	66	1	67	0.36
Railroad Crossing Sign	34	2	36	0.19
Land Use Signal	16	0	16	0.09
Unknown	420	0	420	2.26
Other	106	5	111	0.60
Total	**18,182**	**365**	**18,547**	**100%**

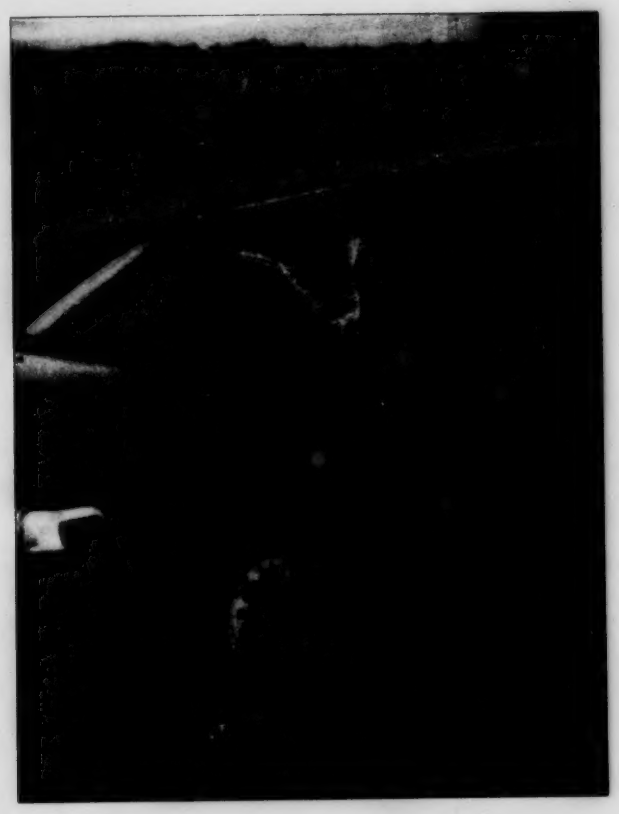
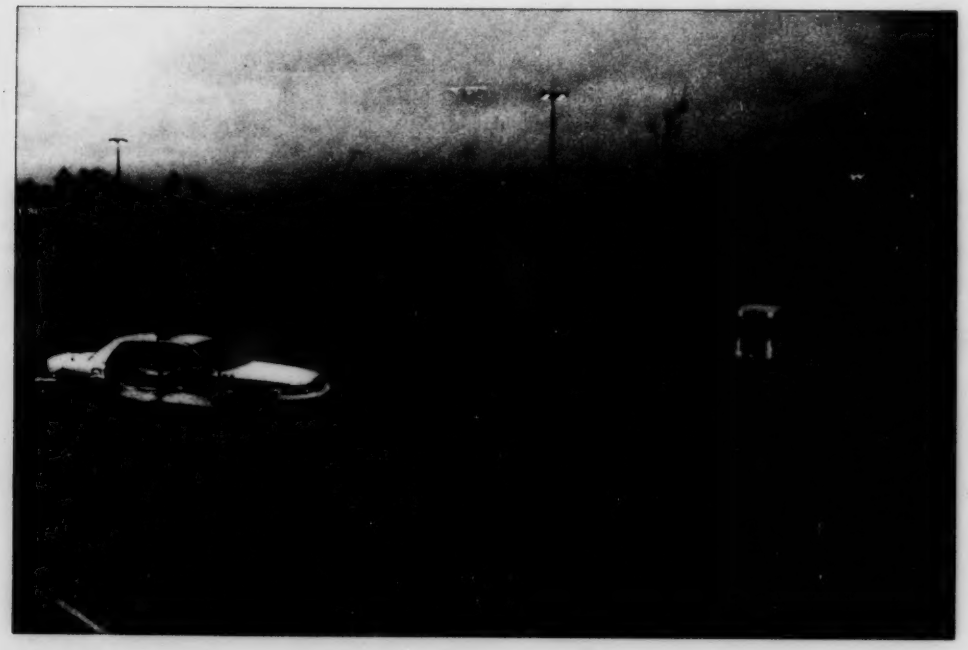


Table 8.10 – Traffic control device and collision location

Control Device	Stop Sign	Yield Sign	Officer/Flag/ School Guard Guard	Railroad Crossing Sign Sign	Lane Use Turn Control Sign	Traffic Signal	Traffic Signal With Advance Flashers	Flashing Signal	Land Use Signal	Not Applicable	Other	Unknown	None	Total
At intersection	2,406	137	17	6	45	3,381	148	166	4	0	68	233	1,915	8,526
Between Intersection Exchanges	76	14	41	6	26	178	6	9	7	0	29	88	6,527	7,007
Intersection of Road & Driveway	50	3	1	0	8	5	0	0	0	0	4	14	910	995
Bridge	4	3	0	0	4	2	0	2	4	0	1	5	267	292
Ferry or Dock	0	0	1	0	0	0	0	0	0	0	0	0	5	6
Tunnel	0	0	1	0	0	0	0	0	0	0	0	0	10	11
Exit Deceleration lane	1	0	0	0	2	0	0	0	0	0	1	3	13	20
Exit Ramp	1	26	0	0	2	2	0	0	0	0	1	0	70	102
Exit Intersection	6	4	0	1	0	5	0	0	0	0	0	0	14	30
Entrance Acceleration Lane	0	13	0	0	0	0	0	0	0	0	0	2	30	45
Entrance Ramp	7	23	0	0	3	2	0	0	0	0	0	1	65	101
Entrance Intersection	4	12	0	0	2	8	2	0	0	0	0	4	32	64
Off Highway	0	0	0	0	0	0	0	0	0	516	0	0	0	516
Parking Lot:Single/Multilevel	0	0	0	0	0	0	0	0	0	391	0	0	0	391
Railroad crossing	5	0	0	23	0	2	0	3	0	0	0	0	13	46
Industrial Road	1	0	0	0	1	0	1	1	0	0	0	1	25	30
Transit -Express Lane	0	0	1	0	0	0	0	0	0	0	0	0	14	15
Other	0	0	4	0	4	0	0	1	1	0	7	5	112	134
Unknown	8	3	1	0	1	10	0	1	0	0	0	64	128	216
Total	**2,569**	**238**	**67**	**36**	**98**	**3,595**	**157**	**183**	**16**	**907**	**111**	**420**	**10,150**	**18,547**



Collision Configurations in 1999

SECTION 9

The distribution of police-attended casualty collisions among the various collision configurations changes little from year to year.

About 65.2% of police attended casualty collisions involved multiple vehicles and 34.8% were single vehicle collisions. Of all fatal collisions, 54.2% involved a single vehicle. Thus multiple vehicle collisions are more common, but single vehicle collisions are more often fatal.

Rear-end collisions are the most common type of multiple vehicle casualty collision, accounting for 28.9% of all such collisions in 1999. The next most frequent type is right-angle collisions, which made up 25.3% of the multiple vehicle collisions, followed by turning left across on-coming traffic at 12.6%. Head-on collisions were the most frequent occurrence among fatal multiple vehicle collisions.

Of all single vehicle casualty collisions, 32.8% involved travelling off the road to the right, followed by travelling off the road to the left (21.6%).

Single and multiple vehicle collisions by collision type

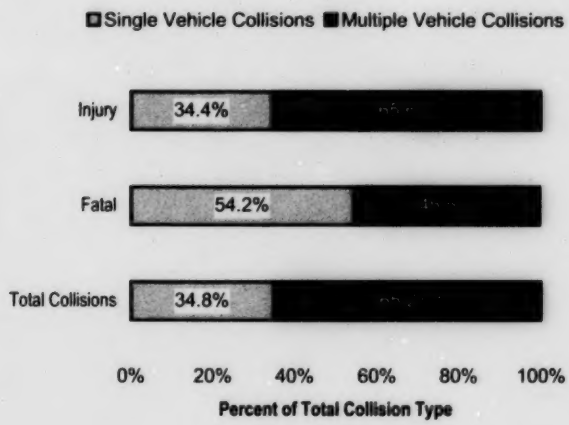


Table 9.01 – Collisions by primary collision occurrence

Primary Collision occurrence	Injury	Fatal	Total	% of Total
Rear End	3,525	9	3,534	19.06
Intersection - Right Angle	3,329	47	3,376	18.20
Off Road Right	2,141	88	2,229	12.02
Left Turn-Across Oncoming Traffic	1,628	15	1,643	8.86
Off Road Left	1,449	41	1,489	8.03
Head On	649	72	721	3.89
Left Turn - Head On	470	1	471	2.54
Side Swipe-Opposite Direction	438	13	451	2.43
Overtaking	253	4	257	1.39
Right Turn-Opposite Direction	192	0	192	1.04
Backing Up	171	2	173	0.93
Left Turn - One Way	117	1	118	0.64
Right Turn - Rear End	113	0	113	0.61
Right Turn - Head On	100	0	100	0.54
Right Turn - Same Direction	50	0	50	0.27
One Way Street	31	1	32	0.17
Other	2,733	65	2,798	15.09
Unknown	793	6	799	4.31
Total	**18,182**	**365**	**18,546**	**100%**

Table 9.02 – Single vehicle collisions by primary collision occurrence

Primary Collision occurrence	Injury	Fatal	Total	% of Total
Off Road Right	2,027	86	2,113	32.75
Off Road Left	1,356	38	1,393	21.59
Intersection - Right Angle	296	15	311	4.82
Head On	147	5	152	2.36
Left Turn-Across Oncoming Traffic	121	1	122	1.89
Backing Up	90	1	91	1.41
Right Turn-Opposite Direction	75	0	75	1.16
Side Swipe-Opposite Direction	42	2	44	0.68
Left Turn - Head On	44	0	44	0.68
Rear End	37	0	37	0.57
Right Turn - Same Direction	24	0	24	0.37
Right Turn - Head On	23	0	23	0.36
Right Turn - Rear End	19	0	19	0.29
Overtaking	14	1	15	0.23
Left Turn - One Way	11	0	11	0.17
One Way Street	10	1	11	0.17
Other	1,573	43	1,616	25.05
Unknown	345	6	351	5.44
Total	**6,254**	**199**	**6,452**	**100%**

Table 9.03 – Multiple vehicle collisions by primary collision occurrence

Primary Collision occurrence	Injury	Fatal	Total	% of Total
Rear End	3,488	9	3,497	28.92
Intersection - Right Angle	3,033	32	3,065	25.34
Left Turn-Across Oncoming Traffic	1,507	14	1,521	12.58
Head On	502	67	569	4.70
Left Turn - Head On	426	1	427	3.53
Side Swipe-Opposite Direction	396	11	407	3.37
Overtaking	239	3	242	2.00
Right Turn-Opposite Direction	117	0	117	0.97
Off Road Right	114	2	116	0.96
Left Turn - One Way	106	1	107	0.88
Off Road Left	93	3	96	0.79
Right Turn - Rear End	94	0	94	0.78
Backing Up	81	1	82	0.68
Right Turn - Head On	77	0	77	0.64
Right Turn - Same Direction	26	0	26	0.21
One Way Street	21	0	21	0.17
Other	1,160	22	1,182	9.77
Unknown	448	0	448	3.70
Total	**11,928**	**166**	**12,094**	**100%**

Alcohol-related Collisions in 1999 SECTION 10

Alcohol-related collisions presented in this report are those police-attended collisions where alcohol involvement was judged to be a contributing factor to the collision. These also include collisions where a pedestrian or bicyclist was judged to be impaired. This is a judgement made by an attending police officer and is very often (but not always) supported by breathalyser tests, toxicology reports or other formal measures of alcohol presence. Furthermore, the alcohol involvement factor does not always implicate the laying of charges in this connection. Police reports tend to underestimate the presence of alcohol in collisions. Where toxicology reports are available for fatally injured victims, they show a higher proportion of alcohol involvement.

Collisions

In 1999, 2,139 (11.8%) of all police attended injury collisions and 89 (24.5%) of all reported fatal collisions involved alcohol. The proportion of fatal alcohol-related collisions is down from 1998, when 104 (28.7%) were alcohol-related. However the number and proportion of alcohol-related injury collisions was unchanged from 1998 (2,141 or 11.9%).

Casualties

Approximately 23.9% of all persons killed in motor vehicle collisions in 1999 were victims of collisions involving alcohol, down from 34.0% in 1998. Close to 4.0% of the alcohol-related casualty collisions resulted in death in 1999 compared to 3.8% in 1998.

Of all the injured victims in 1999 alcohol-related collisions, 68.0% were in or on the drinking driver's vehicle. Similarly, 81.3% of all victims killed in 1999 alcohol-related collisions were in the drinking-driver's vehicle.

Driver Age And Gender

Of all drivers with the alcohol factor involved in police attended casualty collisions, 82.5% were male. With respect to age, 7.4% of the alcohol-involved drivers were under the age of 19. The age group from 20 to 40 accounted for 60% of the alcohol-involved drivers. After the age of 40, the likelihood of alcohol-involvement declines.

Time Of Occurrence

Consistent with previous years, alcohol-related casualty collisions are more likely to occur on weekends (Friday, Saturday, Sunday) than on weekdays. In 1999, approximately 60.3% of all alcohol-related injury collisions occurred on weekends. Likewise, 58.4% of all alcohol-related fatal collisions happened on weekends.

The peak occurrence for alcohol-related collisions is not during the evening rush hour, but between the hours of midnight and 3:00 a.m. Collisions occurring during this period accounted for about 25.1% of all alcohol-related casualty collisions. In addition, the number of alcohol-related casualty collisions climbs at a higher rate through the early and late evening hours than do total casualty collisions.

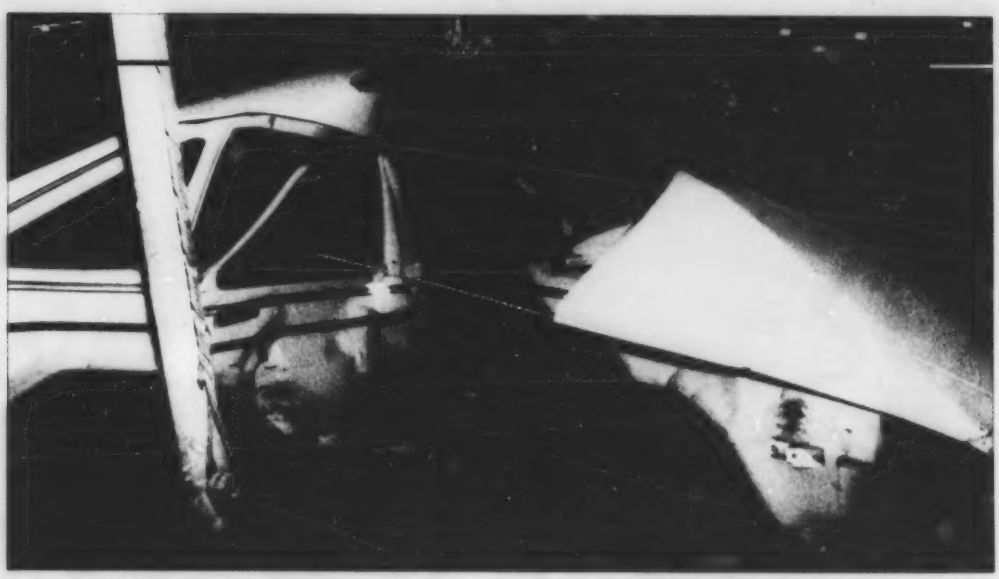


Table 10.01 – Alcohol related collisions and victims by month

Month	Collisions			Victims		
	Injury	Fatal	Total	Injured	Killed	Total
January	160	3	163	258	5	263
February	151	4	155	226	4	230
March	184	6	190	299	8	307
April	158	9	167	244	10	254
May	162	8	170	248	8	256
June	184	9	193	316	11	327
July	189	9	198	284	9	293
August	186	6	192	302	6	308
September	175	11	186	275	11	286
October	223	9	232	353	9	362
November	195	8	203	306	8	314
December	172	7	179	296	7	303
Total	**2,139**	**89**	**2,228**	**3,407**	**96**	**3,503**

Note: This report also includes pedestrians with the alcohol factor who were responsible for the collision.

Figure 10.01 – Alcohol related collisions: Collisions and victims by month

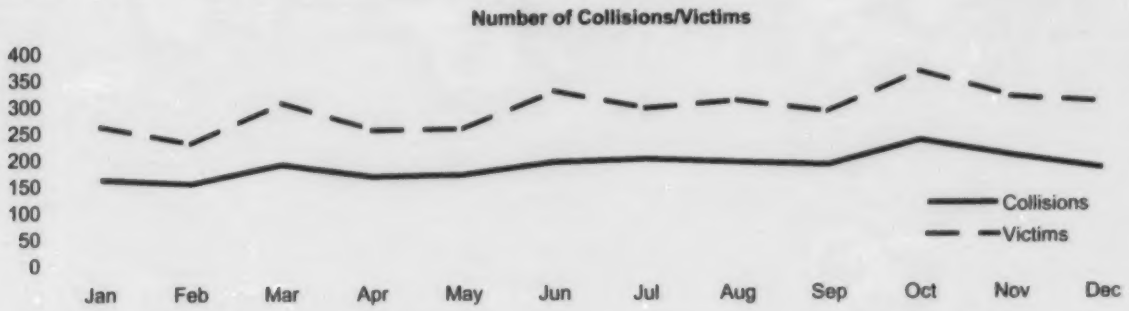
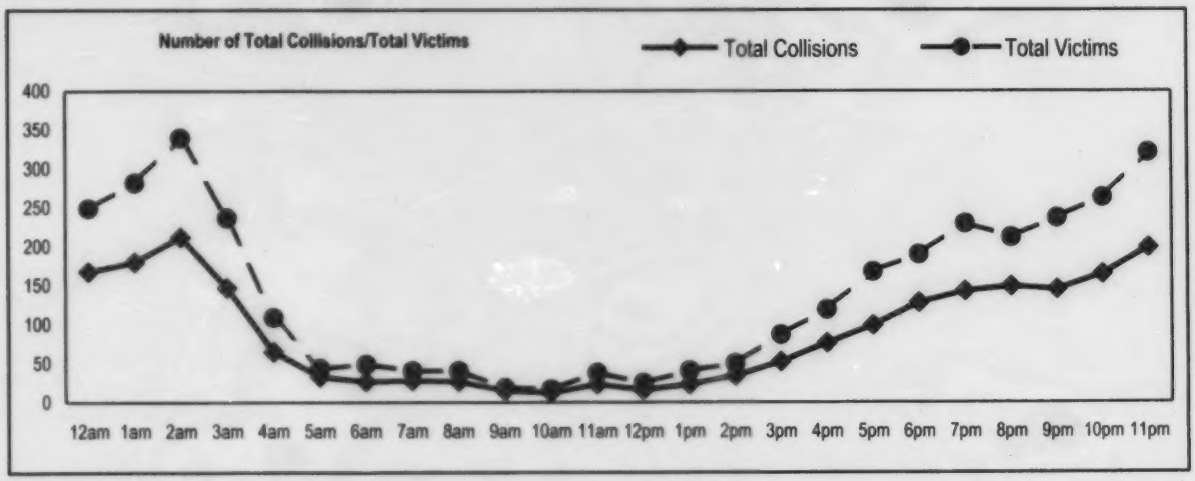


Table 10.02 – Alcohol related injury collisions by day of week and collision hour

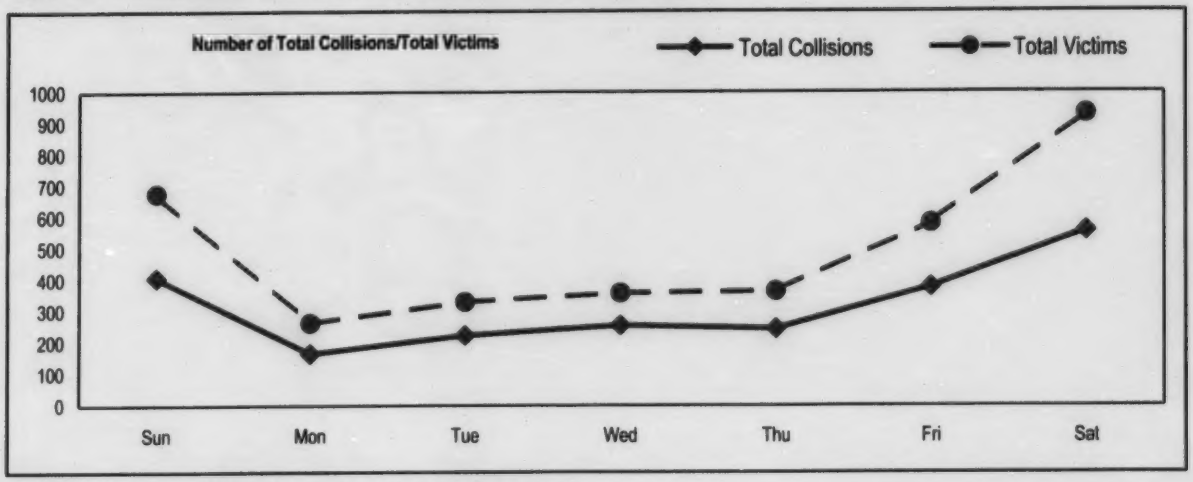
Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total Collisions	% of Total
0000-0059	33	14	19	21	19	22	36	164	7.67
0100-0159	40	9	7	14	23	19	58	170	7.95
0200-0259	48	4	19	21	22	24	66	204	9.54
0300-0359	40	9	10	10	10	14	46	139	6.50
0400-0459	15	3	3	6	5	6	23	61	2.85
0500-0559	10	0	0	2	2	5	12	31	1.45
0600-0659	10	3	1	3	1	4	3	25	1.17
0700-0759	5	1	3	2	1	4	10	26	1.22
0800-0859	5	3	0	1	3	6	8	26	1.22
0900-0959	3	0	1	3	1	4	3	15	0.70
1000-1059	2	0	2	2	2	1	1	10	0.47
1100-1159	8	2	2	3	1	4	3	23	1.08
1200-1259	7	0	1	0	0	4	4	16	0.75
1300-1359	3	2	3	3	2	1	7	21	0.98
1400-1459	9	2	0	3	3	3	14	34	1.59
1500-1559	7	5	3	11	5	5	13	49	2.29
1600-1659	11	8	13	12	9	6	14	73	3.41
1700-1759	14	7	15	14	10	10	21	91	4.25
1800-1859	22	13	17	9	16	28	21	126	5.89
1900-1959	14	17	16	14	13	26	35	135	6.31
2000-2059	19	14	15	21	20	40	17	146	6.83
2100-2159	22	12	20	16	17	32	24	143	6.69
2200-2259	18	13	14	23	23	29	40	160	7.48
2300-2359	17	12	23	22	20	56	40	190	8.88
Unknown	10	5	4	8	9	12	13	61	2.85
Total	**392**	**158**	**211**	**244**	**237**	**365**	**532**	**2,139**	**100%**

Figure 10.02 – Distribution of alcohol related collisions and victims by collision hour



Note: Includes both injury and fatal collisions and both injured and killed victims.

Figure 10.03 – Distribution of alcohol related collisions and victims by day of week



Note: Includes both injury and fatal collisions and both injured and killed victims.

Table 10.03 – Alcohol related fatal collisions by day of week and collision hour

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total Collisions	% of Total
0000-0059	1	0	0	0	0	1	2	4	4.49
0100-0159	3	1	2	0	1	0	3	10	11.24
0200-0259	2	0	1	0	1	1	3	8	8.99
0300-0359	1	1	0	0	0	0	6	8	8.99
0400-0459	0	1	0	0	1	1	1	4	4.49
0500-0559	0	1	0	0	0	0	1	2	2.25
0600-0659	1	0	1	0	0	0	0	2	2.25
0700-0759	1	0	0	1	0	0	0	2	2.25
0800-0859	0	0	0	0	0	0	1	1	1.12
0900-0959	0	0	0	0	0	0	0	0	0.00
1000-1059	0	0	0	1	0	0	1	2	2.25
1100-1159	0	0	0	0	0	0	0	0	0.00
1200-1259	0	0	0	0	0	0	0	0	0.00
1300-1359	0	0	2	0	0	0	0	2	2.25
1400-1459	0	0	0	0	0	0	0	0	0.00
1500-1559	2	0	0	1	0	0	0	3	3.37
1600-1659	0	1	0	1	0	1	0	3	3.37
1700-1759	2	0	1	2	0	1	2	8	8.99
1800-1859	1	0	0	0	0	1	0	2	2.25
1900-1959	1	2	0	2	0	2	1	8	8.99
2000-2059	0	0	0	1	1	1	0	3	3.37
2100-2159	0	0	2	0	0	0	0	2	2.25
2200-2259	0	0	0	0	1	2	2	5	5.62
2300-2359	0	0	3	2	1	1	2	9	10.11
Unknown	0	0	0	0	1	0	0	1	1.12
Total	**15**	**7**	**12**	**11**	**7**	**12**	**25**	**89**	**100%**

Table 10.04 – Drinking drivers* involved in alcohol related collisions by driver age and gender.

	Injury			Fatal		
Age	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
14	2	1	3	0	0	0
15	2	1	3	0	0	0
16	15	3	18	0	2	2
17	40	13	53	3	0	3
18	61	9	70	5	0	5
19	88	15	103	2	1	3
20	85	23	108	2	0	2
21	72	9	81	2	2	4
22	67	12	79	4	1	5
23	52	8	60	4	0	4
24	67	7	74	0	0	0
25	48	9	57	2	1	3
26-30	216	55	271	9	0	9
31-35	193	48	241	10	2	12
36-40	198	54	252	3	2	5
41-45	132	37	169	7	1	8
46-50	116	17	133	6	0	6
51-55	71	13	84	6	1	7
56-60	41	5	46	3	0	3
61-65	18	6	24	1	0	1
66-70	25	1	26	0	1	1
71-75	12	0	12	0	0	0
76-80	2	1	3	0	0	0
81-85	2	0	2	0	0	0
86-90	1	0	1	0	0	0
Unknown	6	1	7	0	0	0
Total	**1,632**	**348**	**1,980**	**69**	**14**	**83**

***Note**: Drivers with alcohol factor only

Figure 10.04 – Drinking drivers involved in alcohol realted collisions by driver age and gender

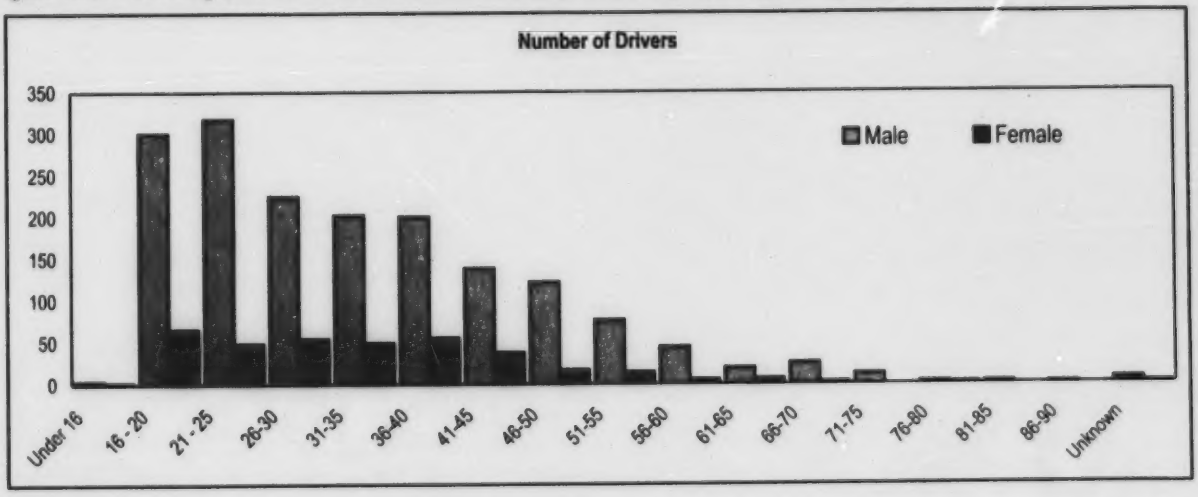


Table 10.05 – Drivers in alcohol-related collisions by age and gender – Non drinking drivers

	Injury			Fatal		
Age	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
15	1	0	1	0	0	0
16	8	6	14	1	0	1
17	20	11	31	1	1	2
18	16	13	29	2	0	2
19	25	9	34	0	1	1
20	26	7	33	2	0	2
21	20	18	38	0	0	0
22	11	9	20	0	1	1
23	29	14	43	0	0	0
24	17	9	26	0	0	0
25	18	6	24	1	0	1
26-30	77	38	115	2	2	4
31-35	73	43	116	3	0	3
36-40	86	38	124	5	1	6
41-45	83	31	114	3	0	3
46-50	72	25	97	0	0	0
51-55	49	15	64	2	0	2
56-60	29	11	40	1	0	1
61-65	18	9	27	0	0	0
66-70	10	7	17	0	0	0
71-75	7	1	8	0	0	0
76-80	3	1	4	0	0	0
81-85	0	1	1	0	0	0
91-95	2	0	2	0	0	0
Unknown	2	1	3	0	0	0
Total	**702**	**323**	**1,025**	**23**	**6**	**29**

Note: This report does not include drivers whose gender were unknown.

Figure 10.05 – Non drinking drivers involved in alcohol related collisions

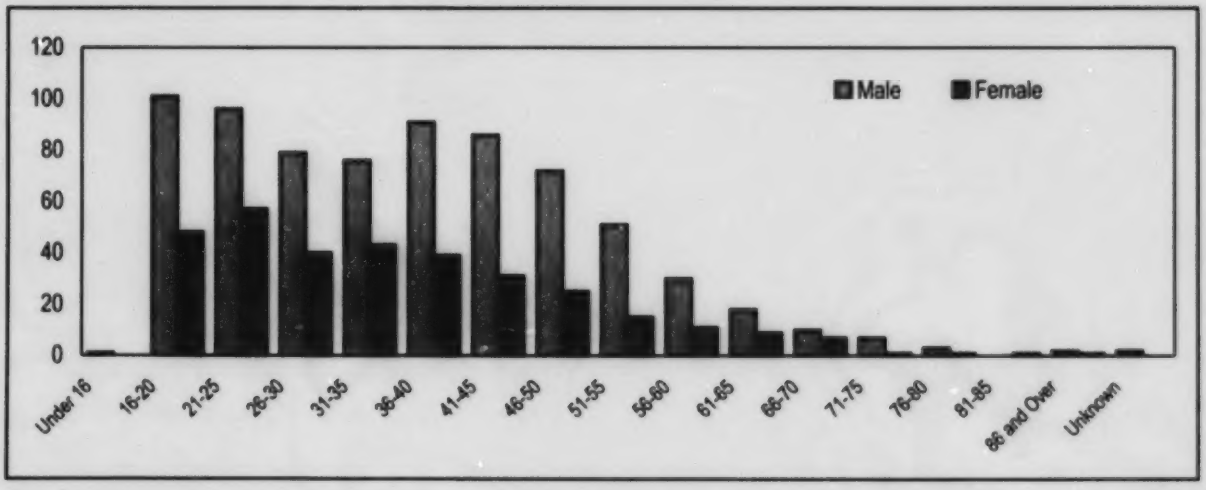


Table 10.06 – Drinking drivers involved in alcohol related collisions compared to all licensed drivers by age

	Licensed Drivers	% of Total Driver Population	# of Drivers Involved in Collisions	% of Total Drivers Involved in Collisions
Under 16*	0	0.00	6	0.29
16	28,261	1.03	20	0.97
17	37,409	1.37	55	2.68
18	40,475	1.48	75	3.65
19	41,636	1.52	106	5.16
20	42,322	1.55	110	5.36
21	42,652	1.56	85	4.14
22	43,407	1.59	84	4.09
23	42,927	1.57	64	3.12
24	43,620	1.60	74	3.60
25	45,272	1.66	60	2.92
26-30	253,954	9.29	280	13.63
31-35	281,415	10.29	253	12.32
36-40	323,881	11.85	257	12.51
41-45	316,009	11.56	177	8.62
46-50	283,266	10.36	139	6.77
51-55	235,308	8.61	91	4.43
56-60	171,351	6.27	49	2.39
61-65	134,409	4.92	25	1.22
66-70	118,310	4.33	27	1.31
71-75	96,148	3.52	12	0.58
76-80	68,759	2.52	3	0.15
80+	42,980	1.57	2	0.10
Total	**2,733,771**	**100%**	**2,054**	**100%**

Note: This report includes drivers with alcohol factor. It does not include drivers whose age is unknown.

* Includes unlicensed drivers.

** Total number of collisions involving drinking drivers in the age group as a percentage of the total number of drivers involved in injury and fatal collisions.

Table 10.07 – Victims injured in alcohol related collisions by victim age and road user class

Victim Age	Driver	Passenger	Hanging on	Pedestrian	Bicycle Driver	Motorcycle Driver	Motorcycle Passenger	Other	Unknown	Total
1	0	6	0	0	0	0	0	0	0	6
2	0	5	0	1	0	0	0	0	0	6
3	0	4	0	0	0	0	0	0	0	4
4	0	5	0	0	0	0	0	1	0	6
5	0	3	0	0	0	0	0	0	1	4
6	0	3	1	0	0	0	0	1	2	7
7	0	6	0	0	0	0	0	0	0	6
8	0	2	0	0	0	0	0	0	0	2
9	0	4	0	0	0	0	0	0	0	4
10	0	8	0	0	0	0	0	0	0	8
11	0	7	0	0	0	0	0	0	0	7
12	0	8	0	0	1	0	0	0	0	9
13	0	12	0	1	1	0	0	0	0	14
14	2	19	0	1	0	0	1	0	1	24
15	3	28	0	3	0	0	0	1	1	36
16	21	65	0	3	1	0	1	1	2	94
17	54	71	0	5	1	0	0	2	1	134
18	65	62	1	2	0	3	0	0	1	134
19	90	81	1	5	0	0	0	1	2	180
20	100	68	0	0	0	0	0	0	3	171
21	81	55	1	4	0	4	0	1	0	146
22	71	54	0	8	1	1	1	0	0	136
23	66	42	0	3	0	0	0	0	0	111
24	66	27	1	3	0	0	0	0	0	97
25	59	34	0	6	1	1	0	0	1	102
26-30	239	103	0	12	3	3	3	1	2	366
31-35	212	73	1	15	8	3	2	0	0	314
36-40	216	60	0	18	12	8	1	0	1	316
41-45	173	41	0	18	3	11	0	0	1	247
46-50	129	30	0	12	4	6	0	0	1	182
51-55	76	28	0	12	1	4	0	0	0	121
56-60	52	10	0	9	0	0	0	0	0	71
61-65	25	9	0	3	0	1	0	0	0	38
66-70	22	8	0	2	0	0	0	0	0	32
71-75	10	3	0	3	0	0	0	1	0	17
76-80	4	3	0	1	0	0	0	0	0	8
81-85	1	2	0	0	0	0	0	0	0	3
91-95	1	2	0	0	0	0	0	0	0	3
Unknown	28	184	2	16	4	0	1	2	4	241
Total	**1,866**	**1,235**	**8**	**166**	**41**	**45**	**10**	**12**	**24**	**3,407**

Table 10.08 – Victims killed in alcohol related collisions by victim age and road user class

Victim Age	Driver	Passenger	Pedestrian	Bicycle Driver	Motorcycle Driver	Other	Total
1	0	1	0	0	0	0	1
10	0	0	0	1	0	0	1
14	0	0	1	0	0	0	1
15	0	2	0	0	0	0	2
16	1	0	0	0	0	0	1
17	3	2	1	0	0	0	6
18	3	1	0	0	0	0	4
19	2	7	0	0	0	0	9
20	0	1	0	0	1	0	2
21	0	1	1	0	1	0	3
22	5	0	0	0	0	0	5
23	2	2	1	0	1	0	6
24	0	1	0	0	0	0	1
25	1	0	0	0	0	0	1
26-30	6	1	0	0	2	0	9
31-35	6	1	2	0	1	0	10
36-40	3	2	0	0	2	0	7
41-45	3	3	1	0	1	1	9
46-50	2	0	1	0	0	0	3
51-55	3	2	2	0	0	0	7
56-60	3	1	0	0	0	0	4
61-65	1	0	1	0	0	0	2
66-70	1	1	0	0	0	0	2
Total	**45**	**29**	**11**	**1**	**9**	**1**	**96**

Table 10.09 – Victims injured in alcohol-related collisions in drinking drivers' vehicles by victim age and road user class (or where pedestrian was drinking)

Victim Age	Driver	Passenger	Hanging on**	Pedestrian	Bicycle Driver	Motorcycle Driver	Motorcycle Passenger	Other	Unknown	Total
1	0	2	0	0	0	0	0	0	0	2
3	0	1	0	0	0	0	0	0	0	1
4	0	1	0	0	0	0	0	0	0	1
5	0	1	0	0	0	0	0	0	0	1
6	0	0	1	0	0	0	0	1	1	3
7	0	2	0	0	0	0	0	0	0	2
8	0	1	0	0	0	0	0	0	0	1
9	0	1	0	0	0	0	0	0	0	1
10	0	2	0	0	0	0	0	0	0	2
12	0	2	0	0	0	0	0	0	0	2
13	0	3	0	0	0	0	0	0	0	3
14	2	11	0	1	0	0	1	0	1	16
15	2	23	0	2	0	0	0	1	1	29
16	12	45	0	2	1	0	0	1	1	62
17	34	60	0	2	1	0	0	1	1	99
18	51	49	1	1	0	1	0	0	1	104
19	74	68	1	4	0	0	0	1	2	150
20	81	50	0	0	0	0	0	0	2	133
21	55	42	1	2	0	4	0	1	0	105
22	59	42	0	2	1	1	0	0	0	105
23	38	30	0	2	0	0	0	0	0	70
24	50	20	0	1	0	0	0	0	0	71
25	41	21	0	3	1	1	0	0	1	68
26-30	185	72	0	5	1	0	2	1	2	268
31-35	145	51	0	8	6	3	2	0	0	215
36-40	146	43	0	16	12	7	1	0	1	226
41-45	108	19	0	14	3	9	0	0	1	154
46-50	80	16	0	7	4	6	0	0	1	114
51-55	46	15	0	9	1	3	0	0	0	74
56-60	25	2	0	8	0	0	0	0	0	35
61-65	14	4	0	3	0	0	0	0	0	21
66-70	15	2	0	2	0	0	0	0	0	19
71-75	6	2	0	3	0	0	0	1	0	12
76-80	2	0	0	0	0	0	0	0	0	2
91-95	0	2	0	0	0	0	0	0	0	2
Unknown	15	115	2	4	3	0	1	2	3	145
Total	**1,286**	**820**	**6**	**101**	**34**	**35**	**7**	**10**	**19**	**2,318**

Note: The alcohol contributing factor is only assigned to drivers and pedestrians. Passengers and hanging-on included in this report were victims who were in/on a drinking driver's vehicle.

** 'Hanging-on' refers to those hanging on a vehicle at the time of collision.

Figure 10.06 – Victims injured in alcohol related collisions

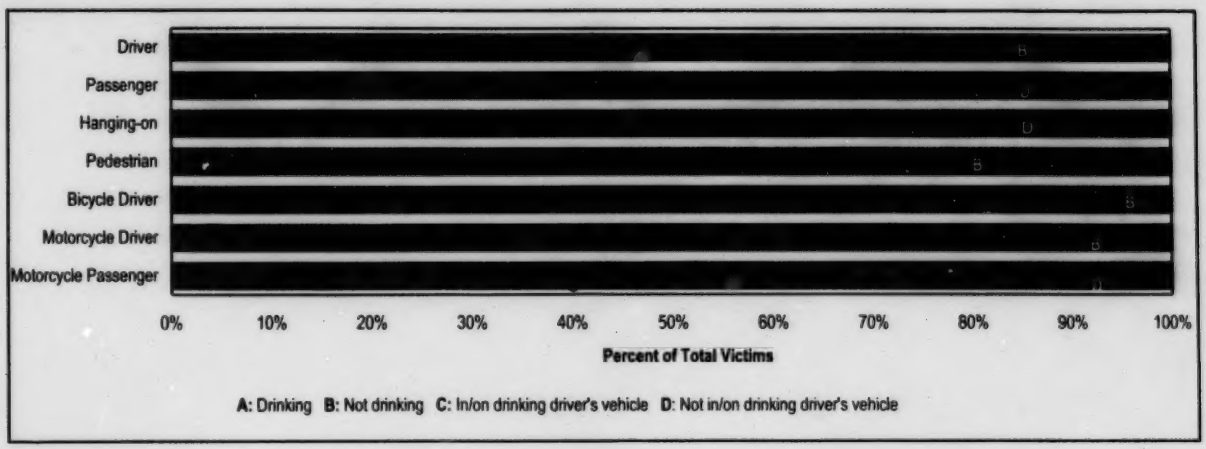
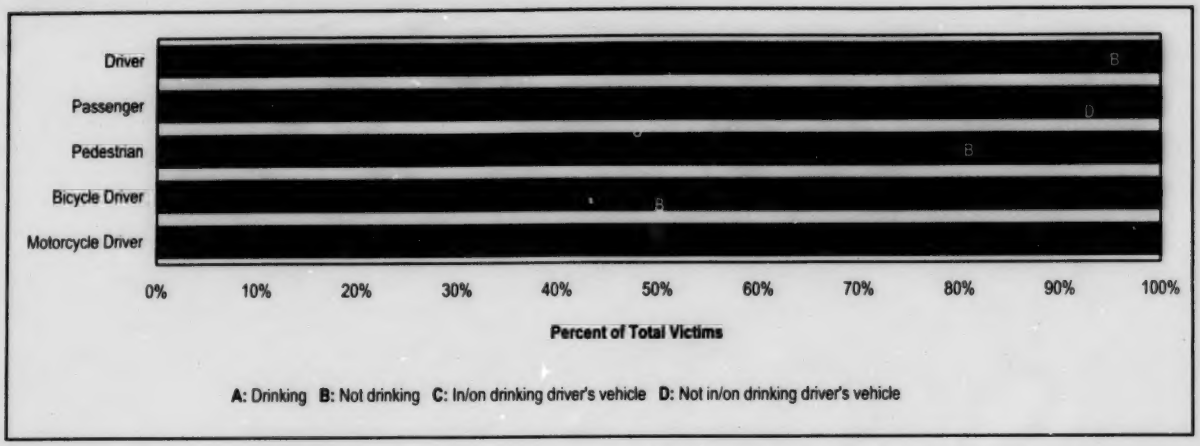


Table 10.10 – Victims killed in alcohol-related collisions in drinking drivers' vehicles by victim age and road user class (or where pedestrian was drinking)

Victim Age	Driver	Passenger	Pedestrian	Motorcycle Driver	Total
15	0	1	0	0	1
16	1	0	0	0	1
17	2	1	0	0	3
18	2	1	0	0	3
19	2	5	0	0	7
20	0	1	0	1	2
21	0	1	0	1	2
22	5	0	0	0	5
23	2	1	0	1	4
25	1	0	0	0	1
26-30	5	1	0	2	8
31-35	6	1	2	1	10
36-40	2	2	0	2	6
41-45	3	3	0	1	7
46-50	2	0	1	0	3
51-55	3	2	2	0	7
56-60	3	1	0	0	4
61-65	1	0	1	0	2
66-70	1	1	0	0	2
76-80	1	0	0	0	0
81-85	0	1	0	0	0
Total	**42**	**23**	**6**	**9**	**78**

* 'Driver' here refers to drivers of all vehicles.
Note: The alcohol contributing factor is only assigned to drivers and pedestrians. Passengers included in this report were victims who were in/on a drinking driver's vehicle.

Figure 10.07 – Victims killed in alcohol related collisions



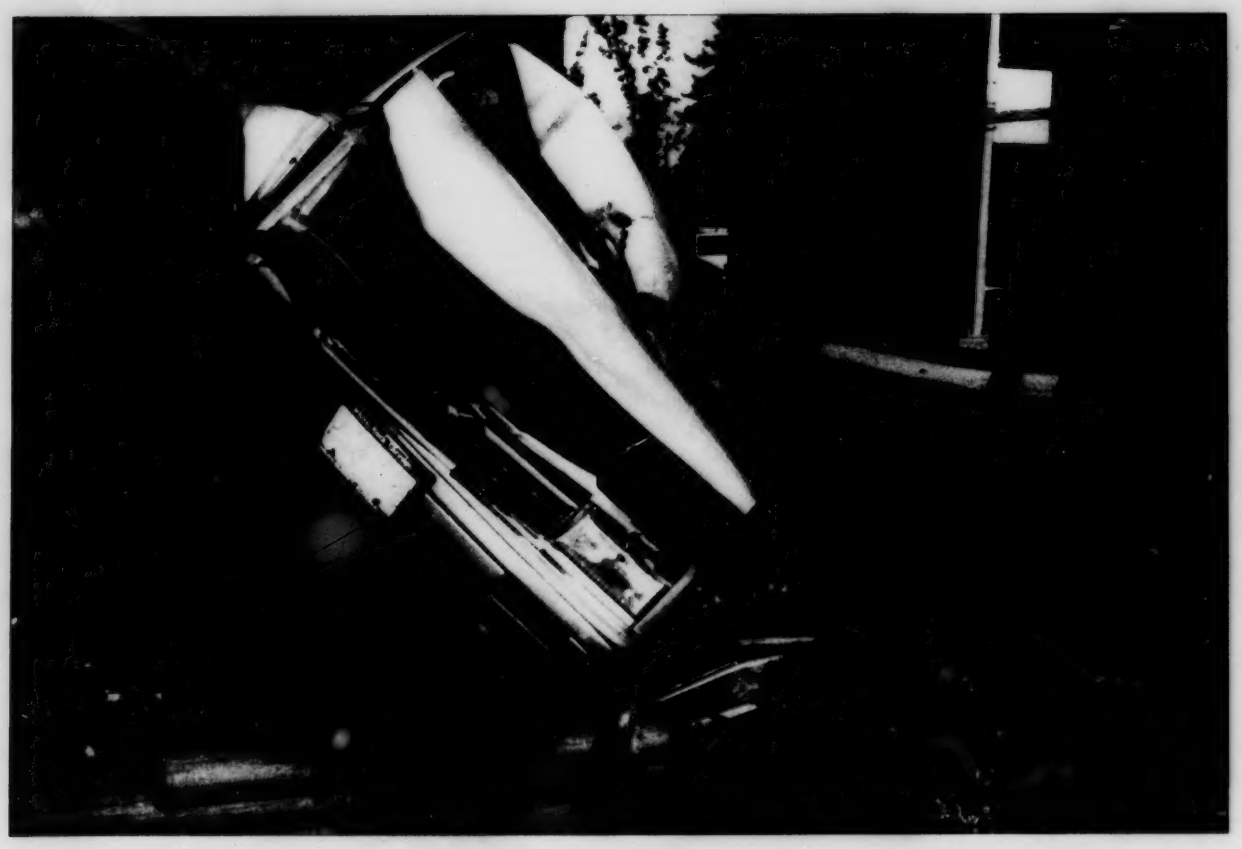


Table 10.11 – Victims injured by victim age and road user class for victims not in drinking driver's vehicle in alcohol related collisions

Victim Age	Driver	Passenger	Hanging-on	Pedestrian	Bicycle Driver	Motorcycle Driver	Motorcycle Passenger	Other	Unknown	Total
1	0	4	0	0	0	0	0	0	0	4
2	0	5	0	1	0	0	0	0	0	6
3	0	3	0	0	0	0	0	0	0	3
4	0	4	0	0	0	0	0	1	0	5
5	0	2	0	0	0	0	0	0	1	3
6	0	3	0	0	0	0	0	0	1	4
7	0	4	0	0	0	0	0	0	0	4
8	0	1	0	0	0	0	0	0	0	1
9	0	3	0	0	0	0	0	0	0	3
10	0	6	0	0	0	0	0	0	0	6
11	0	7	0	0	0	0	0	0	0	7
12	0	6	0	0	1	0	0	0	0	7
13	0	9	0	1	1	0	0	0	0	11
14	0	8	0	0	0	0	0	0	0	8
15	1	5	0	1	0	0	0	0	0	7
16	9	20	0	1	0	0	1	0	1	32
17	20	11	0	3	0	0	0	1	0	35
18	14	13	0	1	0	2	0	0	0	30
19	16	13	0	1	0	0	0	0	0	30
20	19	18	0	0	0	0	0	0	1	38
21	26	13	0	2	0	0	0	0	0	41
22	12	12	0	6	0	0	1	0	0	31
23	28	12	0	1	0	0	0	0	0	41
24	16	7	1	2	0	0	0	0	0	26
25	18	13	0	3	0	0	0	0	0	34
26-30	54	31	0	7	2	3	1	0	0	98
31-35	67	22	1	7	2	0	0	0	0	99
36-40	70	17	0	2	0	1	0	0	0	90
41-45	65	22	0	4	0	2	0	0	0	93
46-50	49	14	0	5	0	0	0	0	0	68
51-55	30	13	0	3	0	1	0	0	0	47
56-60	27	8	0	1	0	0	0	0	0	36
61-65	11	5	0	0	0	1	0	0	0	17
66-70	7	6	0	0	0	0	0	0	0	13
71-75	4	1	0	0	0	0	0	0	0	5
76-80	2	3	0	1	0	0	0	0	0	6
81-85	1	2	0	0	0	0	0	0	0	3
91-95	1	0	0	0	0	0	0	0	0	1
Unknown	13	69	0	12	1	0	0	0	1	96
Total	**580**	**415**	**2**	**65**	**7**	**10**	**3**	**2**	**5**	**1,089**

Table 10.12 – Victims killed in alcohol-related collisions by victim age and road user class for victims not in drinking driver's vehicle

Victim Age	Driver	Pass-enger	Pedes-trian	Bicycle Driver	Other	Total
1	0	1	0	0	0	1
10	0	0	0	1	0	1
14	0	0	1	0	0	1
15	0	1	0	0	0	1
17	1	1	1	0	0	3
18	1	0	0	0	0	1
19	0	2	0	0	0	2
21	0	0	1	0	0	1
23	0	1	1	0	0	2
24	0	1	0	0	0	1
26-30	1	0	0	0	0	1
36-40	1	0	0	0	0	1
41-45	0	0	1	0	1	2
Total	**4**	**7**	**5**	**1**	**1**	**18**

Unsafe Speed Collisions in 1999 SECTION 11

Unsafe speed collisions in this report are those police-reported casualty collisions where unsafe speed was judged to be a contributing factor to the collision. This is a judgement made by the attending police officer and may not always be accompanied by the laying of speed-related charges. However, the judgment will generally be supported by evidence presented by witnesses, indications of excessive skidding or severe crush zones on the damaged vehicles.

Collisions

During 1999 unsafe speed was involved in 2,996 (16.5%) of all reported injury collisions, and 122 (33.5%) of reported fatal collisions.

Unlike previous years (prior to 1998) where unsafe speed was the single most cited contributing factor in fatal collisions, unsafe speed was surpassed by driving without due care in 1999 and, as in 1998, was the second most cited contributing factor (See Section 3).

Casualties

About 3.9% of the unsafe speed related casualty collisions resulted in death in 1999 while about 1.6% of collisions caused by contributing factors other than unsafe speed resulted in death in the same year. Approximately 34.7% of persons killed in motor vehicle collisions in 1999 were victims of collisions caused by unsafe speed.

During 1999, 73.0% of victims injured in unsafe speed related collisions were in vehicles travelling at unsafe speed. Similarly, 82.7% (115 of 139) of all victims killed in unsafe speed related collisions were in vehicles travelling at unsafe speed.

Driver Age And Gender

Of all drivers travelling at unsafe speed resulting in a casualty collision in 1999, 77.5% were male. Of these male drivers, about 30.4% were between the ages of 16 and 20, and 32.0% were between the ages of 21 and 30. Of female drivers travelling at unsafe speed resulting in a casualty collision, 29.2% of them were between the ages of 16 and 20 and 26.4% were between the ages of 21 and 30.

Time Of Occurrence

Casualty collisions involving unsafe speed are more likely to occur on weekend days (Friday, Saturday, Sunday) than on weekdays. In 1999, 48.9% of all unsafe speed related injury collisions occurred on a weekend. Moreover, 47.5% of all unsafe speed related fatal collisions happened on a weekend.

There is a peak occurrence for unsafe speed related injury collisions between 3pm and 6pm, similar to the pattern for total casualty collisions. Second peaks occurred between 10pm and 11pm and again between 2am 3am. For fatal collisions, there were peaks between 1am and 2am, between 10am and 11am and between 7pm and 8pm.

Table 11.01 – Unsafe speed related collisions and victims by month

	Collisions			Victims		
Month	**Injury**	**Fatal**	**Total**	**Injured**	**Killed**	**Total**
January	260	12	272	429	13	442
February	229	8	237	390	9	399
March	216	9	225	353	12	365
April	193	8	201	305	9	314
May	226	12	238	367	12	379
June	237	12	249	404	15	419
July	251	14	265	437	16	453
August	247	11	258	423	12	435
September	253	9	262	422	9	431
October	290	10	300	469	12	481
November	261	5	266	443	5	448
December	333	12	345	584	15	599
Total	**2,996**	**122**	**3,118**	**5,026**	**139**	**5,165**

Figure 11.01 – Unsafe speed related collisions and victims by month

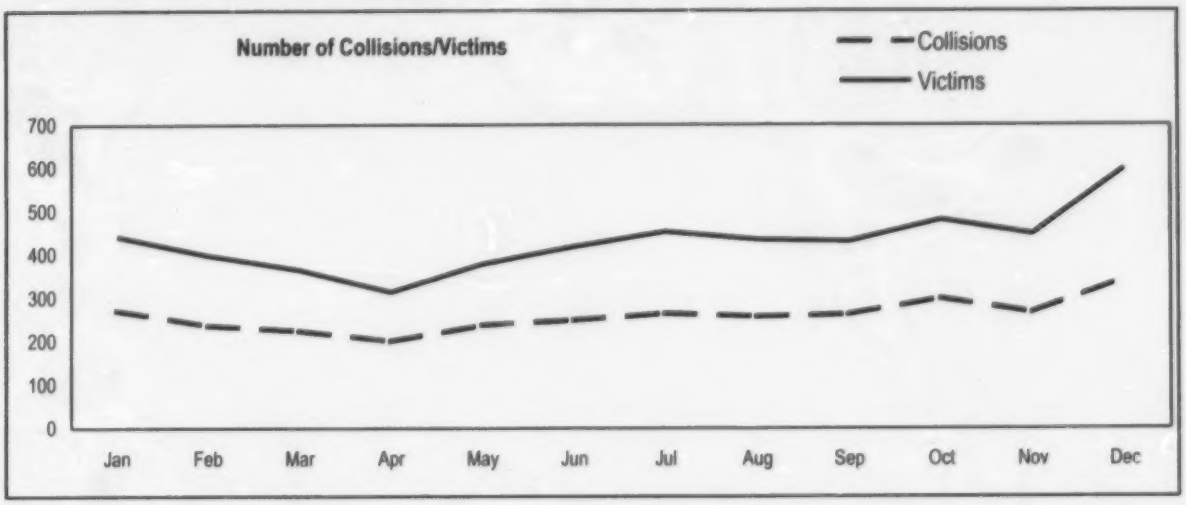
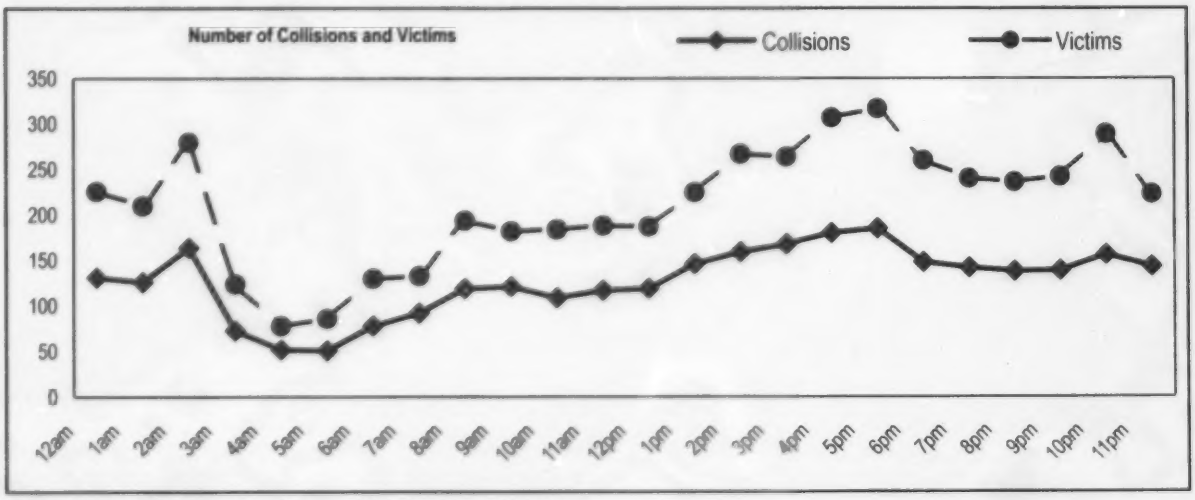


Table 11.02 – Unsafe speed related injury collisions by day of week and hour of collision

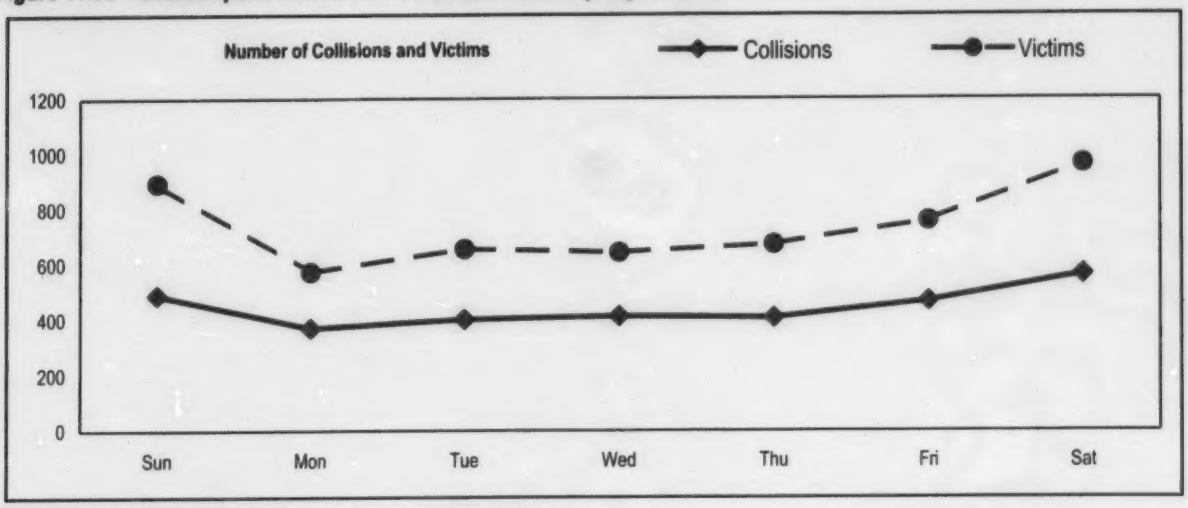
Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total Collisions	% of Total
0000-0059	32	16	9	13	13	15	27	125	4.17
0100-0159	29	8	7	14	11	11	34	114	3.81
0200-0259	34	5	18	17	13	17	52	156	5.21
0300-0359	20	1	9	2	4	7	23	66	2.20
0400-0459	12	6	1	4	4	9	14	50	1.67
0500-0559	11	3	3	6	6	7	12	48	1.60
0600-0659	13	18	5	9	10	12	9	76	2.54
0700-0759	10	11	7	12	9	19	21	89	2.97
0800-0859	13	14	25	21	13	13	18	117	3.91
0900-0959	22	17	14	20	15	17	14	119	3.97
1000-1059	14	15	11	14	12	14	20	100	3.34
1100-1159	14	15	17	12	24	16	18	116	3.87
1200-1259	13	20	20	16	15	15	17	116	3.87
1300-1359	21	23	20	20	24	15	18	141	4.71
1400-1459	34	18	27	12	13	21	29	154	5.14
1500-1559	21	24	25	29	32	18	16	165	5.51
1600-1659	25	23	19	28	23	27	26	171	5.71
1700-1759	25	21	29	19	38	26	21	179	5.97
1800-1859	24	18	25	18	15	31	12	143	4.77
1900-1959	21	12	15	21	23	23	20	135	4.51
2000-2059	14	14	18	17	21	24	26	134	4.47
2100-2159	13	15	21	16	14	28	25	132	4.41
2200-2259	18	16	22	29	16	21	28	150	5.01
2300-2359	14	11	10	21	20	34	29	139	4.64
Unknown	7	7	11	8	6	9	13	61	2.04
Total	**474**	**351**	**388**	**398**	**394**	**449**	**542**	**2,996**	**100%**

Figure 11.02 – Unsafe speed related collisions and victims by collision hour



Note: Includes both injury and fatal collisions and both injured and killed victims.

Figure 11.03 – Unsafe speed related collisions and victims by day of week



Note: Includes both injury and fatal collisions and both injured and killed victims.

Table 11.03 – Unsafe speed related fatal collisions by day of week and by hour of collision

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total Collisions	% of Total
0000-0059	1	0	0	0	0	1	4	6	4.92
0100-0159	2	2	1	0	2	2	3	12	9.84
0200-0259	1	0	2	0	1	2	2	8	6.56
0300-0359	1	1	0	2	0	0	3	7	5.74
0400-0459	0	2	0	0	0	0	0	2	1.64
0500-0559	0	1	1	0	1	0	0	3	2.46
0600-0659	0	1	1	0	0	0	0	2	1.64
0700-0759	1	0	1	1	0	0	0	3	2.46
0800-0859	0	0	1	0	0	1	0	2	1.64
0900-0959	0	1	0	0	0	1	0	2	1.64
1000-1059	0	2	1	5	0	0	1	9	7.38
1100-1159	0	0	0	0	0	0	1	1	0.82
1200-1259	0	1	1	0	0	0	1	3	2.46
1300-1359	1	1	1	1	0	1	0	5	4.10
1400-1459	2	0	0	0	1	1	1	5	4.10
1500-1559	1	0	0	1	0	0	1	3	2.46
1600-1659	0	3	0	1	2	1	2	9	7.38
1700-1759	3	0	1	1	0	1	0	6	4.92
1800-1859	2	0	0	0	1	1	1	5	4.10
1900-1959	0	2	0	1	1	1	2	7	5.74
2000-2059	1	1	0	0	1	1	0	4	3.28
2100-2159	0	1	2	0	2	2	0	7	5.74
2200-2259	0	1	0	1	1	2	1	6	4.92
2300-2359	0	0	1	2	0	1	0	4	3.28
Unknown	0	0	0	0	1	0	0	1	0.82
Total	**16**	**20**	**14**	**16**	**14**	**19**	**23**	**122**	**100**

Table 11.04 – Collisions resulting from unsafe speed by driver age and gender - speeding drivers only

	Injury			Fatal		
Driver Age	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
11	1	1	2	0	0	0
14	4	1	5	1	0	1
15	10	1	11	0	0	0
16	98	29	127	2	0	2
17	151	47	198	5	0	5
18	151	42	193	6	0	6
19	173	46	219	5	2	7
20	141	38	179	7	0	7
21	118	26	144	7	0	7
22	104	24	128	6	1	7
23	78	18	96	5	1	6
24	81	17	98	2	0	2
25	56	20	76	0	1	1
26-30	297	76	373	14	0	14
31-35	200	60	260	9	3	12
36-40	181	68	249	9	3	12
41-45	154	49	203	7	0	7
46-50	118	48	166	4	2	6
51-55	62	34	96	5	1	6
56-60	38	8	46	3	1	4
61-65	25	15	40	3	0	3
66-70	19	4	23	3	0	3
71-75	14	6	20	2	0	2
76-80	11	4	15	1	1	2
81-85	4	0	4	1	0	1
Unknown	6	0	6	0	0	0
Total	**2,295**	**682**	**2,977**	**107**	**16**	**123**

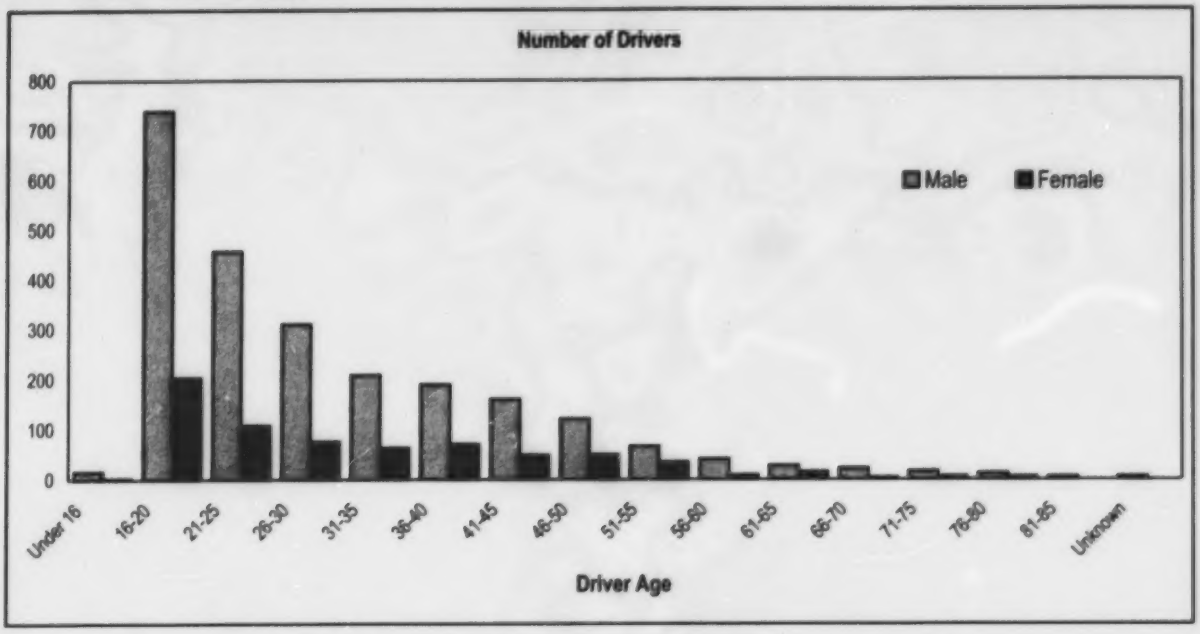
Note: This report does not include drivers whose gender was unknown.

Table 11.05 – Collisions resulting from unsafe speed by driver age and gender - drivers not in speeding vehicle

	Injury			Fatal		
Driver Age	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
12	1	0	1	0	0	0
16	9	7	16	1	0	1
17	20	13	33	0	2	2
18	25	16	41	2	0	2
19	25	18	43	1	0	1
20	24	9	33	2	1	3
21	15	14	29	0	0	0
22	20	16	36	1	1	2
23	8	15	23	1	0	1
24	27	10	37	1	1	2
25	15	12	27	1	0	1
26-30	99	58	157	3	1	4
31-35	101	58	159	7	0	7
36-40	113	59	172	6	1	7
41-45	127	69	196	3	1	4
46-50	105	34	139	0	0	0
51-55	93	37	130	1	0	1
56-60	49	23	72	5	1	6
61-65	41	14	55	5	0	5
66-70	31	15	46	2	0	2
71-75	20	10	30	1	0	1
76-80	8	5	13	0	0	0
81-85	7	5	12	1	0	1
86-90	1	1	2	0	0	0
91-95	2	0	2	0	0	0
Unknown	4	0	4	0	0	0
Total	**990**	**518**	**1,508**	**44**	**9**	**53**

Note: This report does not include drivers whose gender were unknown.

Figure 11.04 – Drivers travelling at unsafe speed involved in collisions



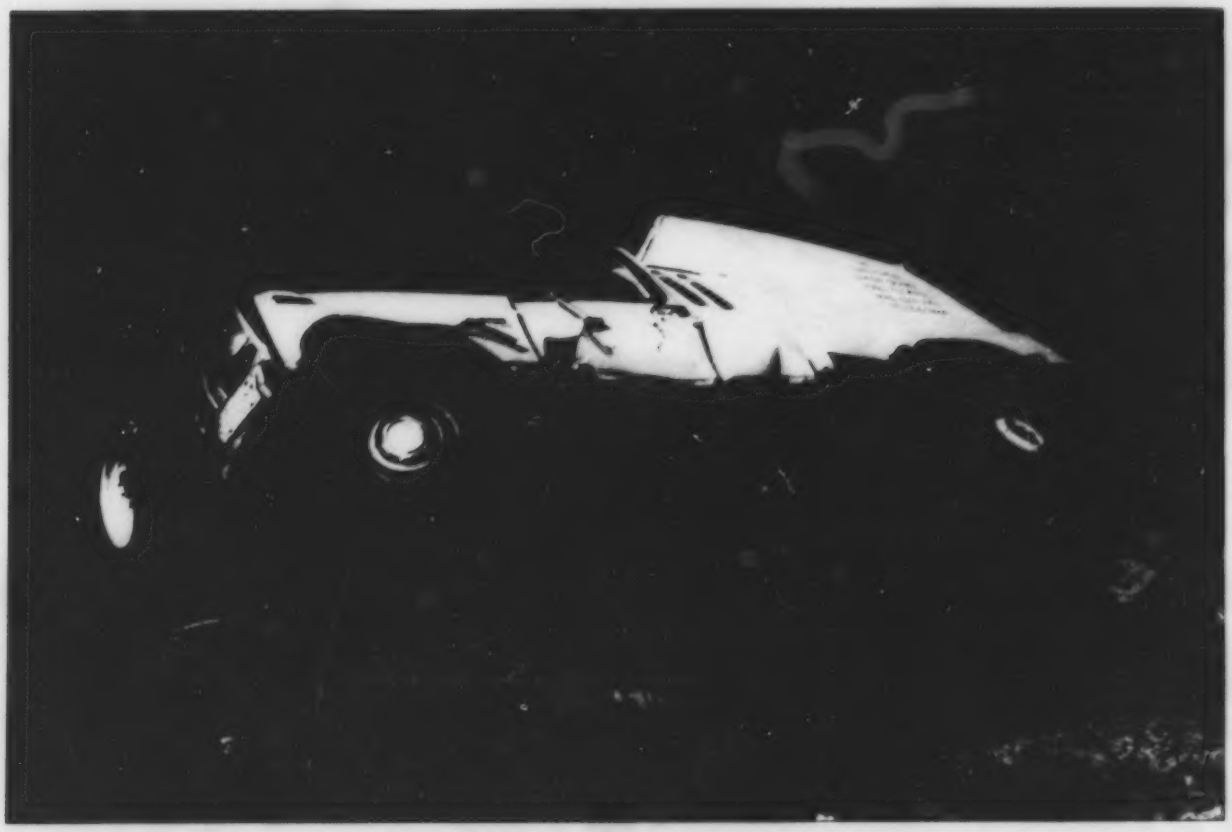


Figure 11.05 – Drivers not in speeding vehicles involved in collisions resulting from unsafe speed

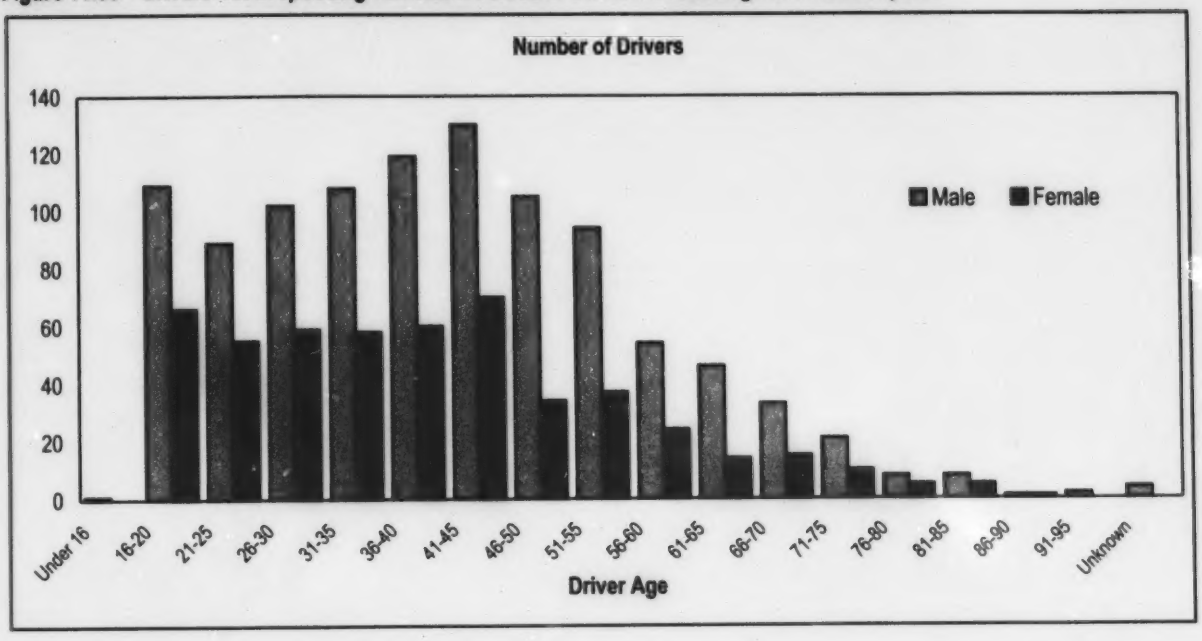


Table 11.06 – Licensed drivers and drivers involved in unsafe speed related collisions (drivers travelling at unsafe speed only) by age

	Licensed Drivers	% of Total Driver Population	# of Drivers Involved In Injury and Fatal Collisions	% of Total Drivers Involved in Injury and Fatal Collisions**
Under 16*	0	0.00	19	0.61
16	28,261	1.03	129	4.17
17	37,409	1.37	203	6.56
18	40,475	1.48	199	6.43
19	41,636	1.52	226	7.30
20	42,322	1.55	186	6.01
21	42,652	1.56	151	4.88
22	43,407	1.59	135	4.36
23	42,927	1.57	102	3.30
24	43,620	1.60	100	3.23
25	45,272	1.66	77	2.49
26-30	253,954	9.29	387	12.51
31-35	281,415	10.29	272	8.79
36-40	323,881	11.85	261	8.44
41-45	316,009	11.56	210	6.79
46-50	283,266	10.36	172	5.56
51-55	235,308	8.61	102	3.30
56-60	171,351	6.27	50	1.62
61-65	134,409	4.92	43	1.39
66-70	118,310	4.33	26	0.84
71-75	96,148	3.52	22	0.71
76-80	68,759	2.52	17	0.55
80+	42,980	1.57	5	0.16
Total	**2,733,771**	**100%**	**3,094**	**100%**

Note: This report does not include drivers whose age is unknown.

* Includes unlicensed and bicycle drivers.

** Total number of collision involved drivers in the age group as a percentage of the total number of drivers involved in personal injury and fatal collisions.

Table 11.07 – Victims injured by victim age and road user class in collisions resulting from unsafe speed

Victim Age	Driver	Passenger	Hanging on	Pedestrian	Bicycle Driver	Motorcycle Driver	Motorcycle Passenger	Other	Unknown	Total
1	0	10	0	0	0	0	0	0	1	11
2	0	4	0	0	0	0	0	0	0	4
3	0	9	0	0	0	0	0	0	0	9
4	0	11	0	0	0	0	0	0	0	11
5	0	9	0	0	0	0	0	0	0	9
6	0	11	0	0	0	0	0	0	1	12
7	0	11	0	0	1	0	0	0	0	12
8	0	11	0	0	1	0	0	0	1	13
9	0	9	0	0	2	0	0	0	0	11
10	0	17	0	0	1	0	0	0	0	18
11	1	13	0	3	2	0	0	0	0	19
12	0	13	1	1	4	0	1	1	0	21
13	0	15	0	2	0	0	0	0	1	18
14	3	39	0	1	2	0	0	0	2	47
15	8	81	0	1	2	0	0	2	2	96
16	81	148	0	1	4	1	1	1	1	238
17	145	171	0	1	1	1	0	1	3	323
18	151	120	0	2	1	4	1	0	1	280
19	165	118	0	1	0	7	0	2	2	295
20	127	104	0	0	1	9	1	0	4	246
21	109	74	0	0	0	7	0	2	0	192
22	105	56	0	2	0	13	0	0	1	177
23	80	55	0	1	0	7	0	0	0	143
24	88	35	0	1	1	4	0	0	1	130
25	66	44	0	0	0	3	0	0	0	113
26-30	329	153	0	2	3	20	4	0	0	511
31-35	269	99	0	3	1	6	1	0	0	379
36-40	272	77	0	5	6	9	1	1	0	371
41-45	235	65	0	4	0	14	0	0	3	321
46-50	175	52	0	3	1	11	1	0	0	243
51-55	130	32	0	2	0	4	0	0	1	169
56-60	70	29	0	0	0	1	0	0	1	101
61-65	51	21	0	0	0	0	0	0	1	73
66-70	43	25	0	1	1	1	0	0	0	71
71-75	31	23	0	1	0	1	0	0	0	56
76-80	17	9	0	1	0	0	0	0	0	27
81-85	8	8	0	0	0	0	0	0	0	16
86-90	1	3	0	0	0	0	0	0	0	4
91-95	1	0	0	0	0	0	0	0	0	1
Unknown	21	199	0	8	1	1	4	0	1	235
95+	0	1	0	0	0	0	0	0	0	1
Total	**2,782**	**1,984**	**1**	**47**	**36**	**124**	**15**	**10**	**28**	**5,027**

Table 11.08 – Victims killed by victim age and road user class in collisions resulting from unsafe speed

Victim Age	Driver	Passenger	Pedestrian	Motorcycle Driver	Other	Total
3	0	0	1	0	0	1
9	0	1	0	0	0	1
14	1	1	0	0	0	2
15	0	5	0	0	0	5
16	1	3	0	0	0	4
17	5	2	0	0	0	7
18	2	0	0	0	0	2
19	5	6	0	0	0	11
20	1	1	0	1	0	3
21	1	0	1	2	0	4
22	7	0	0	0	0	7
23	3	1	0	1	0	5
24	0	1	0	1	0	2
25	0	1	0	0	0	1
26-30	7	3	0	4	0	14
31-35	9	1	0	0	0	10
36-40	7	1	1	2	0	11
41-45	5	2	1	0	1	9
46-50	5	3	0	0	0	8
51-55	3	2	0	0	0	5
56-60	4	3	0	0	0	7
61-65	5	1	0	0	0	6
66-70	1	2	0	0	0	3
71-75	1	2	0	0	0	3
76-80	1	0	2	0	0	3
81-85	2	3	0	0	0	5
Total	**76**	**45**	**6**	**11**	**1**	**139**

Table 11.09 – Victims injured in vehicles travelling at unsafe speed by victim age and road user class

Victim Age	Driver	Passenger	Hanging on	Bicycle Driver	Motorcycle Driver	Motorcycle Passenger	Other	Unknown	Total
1	0	5	0	0	0	0	0	1	6
2	0	2	0	0	0	0	0	0	2
3	0	3	0	0	0	0	0	0	3
4	0	5	0	0	0	0	0	0	5
5	0	4	0	0	0	0	0	0	4
6	0	5	0	0	0	0	0	1	6
7	0	5	0	1	0	0	0	0	6
8	0	5	0	1	0	0	0	1	7
9	0	3	0	1	0	0	0	0	4
10	0	9	0	1	0	0	0	0	10
11	1	4	0	1	0	0	0	0	6
12	0	7	1	4	0	1	1	0	14
13	0	11	0	0	0	0	0	1	12
14	3	27	0	2	0	0	0	2	34
15	8	76	0	2	0	0	2	2	90
16	68	135	0	3	1	1	1	1	210
17	129	154	0	1	0	0	1	3	288
18	126	100	0	1	3	1	0	1	232
19	149	109	0	0	6	0	2	2	268
20	105	89	0	1	9	1	0	2	207
21	96	63	0	0	7	0	2	0	168
22	87	46	0	0	13	0	0	1	147
23	68	46	0	0	7	0	0	0	121
24	64	29	0	1	4	0	0	1	99
25	54	34	0	0	3	0	0	0	91
26-30	247	118	0	2	20	4	0	0	391
31-35	169	66	0	0	5	1	0	0	241
36-40	182	56	0	5	8	1	0	0	252
41-45	134	35	0	0	14	0	0	2	185
46-50	101	26	0	1	10	1	0	0	139
51-55	65	15	0	0	4	0	0	0	84
56-60	30	11	0	0	1	0	0	1	43
61-65	31	11	0	0	0	0	0	1	43
66-70	20	8	0	1	1	0	0	0	30
71-75	13	19	0	0	1	0	0	0	33
76-80	10	2	0	0	0	0	0	0	12
81-85	3	2	0	0	0	0	0	0	5
86-90	0	1	0	0	0	0	0	0	1
Unknown	13	151	0	1	0	3	0	1	169
Total	**1,976**	**1,497**	**1**	**30**	**117**	**14**	**9**	**24**	**3,668**

Figure 11.06 – Victims injured in unsafe speed related collisions in/not in vehicle travelling at unsafe speed

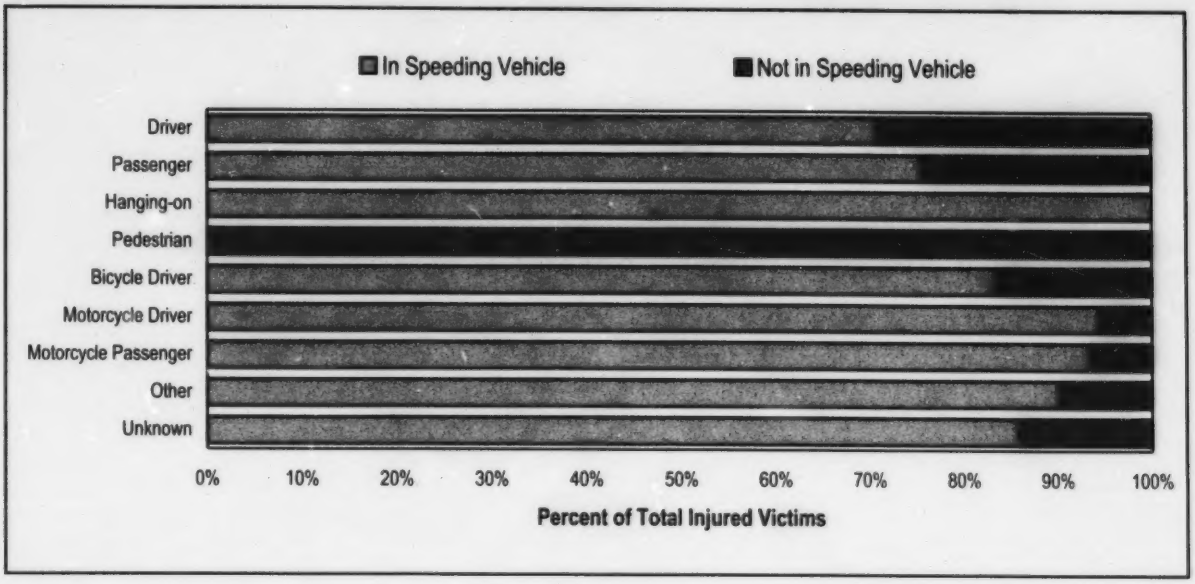


Table 11.10 – Victims killed in vehicles travelling at unsafe speed by victim age and road user class

Victim Age	Driver	Passenger	Motorcycle Driver	Total
9	0	1	0	1
14	1	0	0	1
15	0	4	0	4
16	1	3	0	4
17	4	2	0	6
18	2	0	0	2
19	5	4	0	9
20	1	1	1	3
21	1	0	2	3
22	6	0	0	6
23	3	1	1	5
24	0	1	1	2
25	0	1	0	1
26-30	7	3	4	14
31-35	8	1	0	9
36-40	5	1	2	8
41-45	3	2	0	5
46-50	5	3	0	8
51-55	3	2	0	5
56-60	3	3	0	6
61-65	3	1	0	4
66-70	1	2	0	3
71-75	1	1	0	2
76-80	1	0	0	1
81-85	1	2	0	3
Total	**65**	**39**	**11**	**115**

Figure 11.07 – Victims killed in unsafe speed related collisions in/not in vehicle travelling at unsafe speed

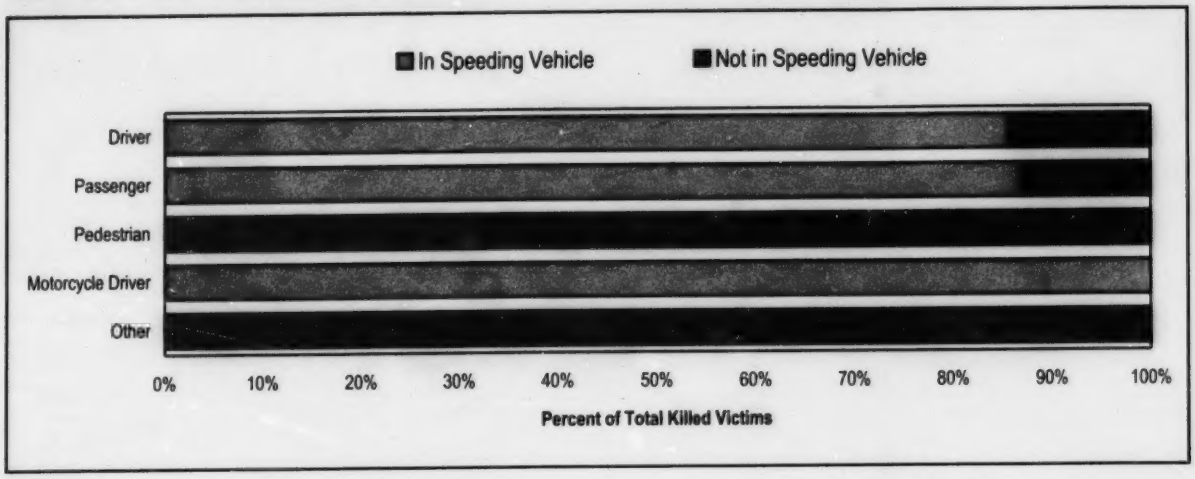


Table 11.11 – Victims injured by victim age and road user class not in vehicles travelling at unsafe speed

Victim Age	Driver	Passenger	Pedestrian	Bicycle Driver	Motorcycle Driver	Motorcycle Passenger	Other	Unknown	Total
1	0	5	0	0	0	0	0	0	5
2	0	2	0	0	0	0	0	0	2
3	0	6	0	0	0	0	0	0	6
4	0	6	0	0	0	0	0	0	6
5	0	5	0	0	0	0	0	0	5
6	0	6	0	0	0	0	0	0	6
7	0	6	0	0	0	0	0	0	6
8	0	6	0	0	0	0	0	0	6
9	0	6	0	1	0	0	0	0	7
10	0	8	0	0	0	0	0	0	8
11	0	9	3	1	0	0	0	0	13
12	0	6	1	0	0	0	0	0	7
13	0	4	2	0	0	0	0	0	6
14	0	12	1	0	0	0	0	0	13
15	0	5	1	0	0	0	0	0	6
16	13	13	1	1	0	0	0	0	28
17	16	17	1	0	1	0	0	0	35
18	25	20	2	0	1	0	0	0	48
19	16	9	1	0	1	0	0	0	27
20	22	15	0	0	0	0	0	2	39
21	13	11	0	0	0	0	0	0	24
22	18	10	2	0	0	0	0	0	30
23	12	9	1	0	0	0	0	0	22
24	24	6	1	0	0	0	0	0	31
25	12	10	0	0	0	0	0	0	22
26-30	82	35	2	1	0	0	0	0	120
31-35	100	33	3	1	1	0	0	0	138
36-40	90	21	5	1	1	0	1	0	119
41-45	101	30	4	0	0	0	0	1	136
46-50	74	26	3	0	1	0	0	0	104
51-55	65	17	2	0	0	0	0	1	85
56-60	40	18	0	0	0	0	0	0	58
61-65	20	10	0	0	0	0	0	0	30
66-70	23	17	1	0	0	0	0	0	41
71-75	18	4	1	0	0	0	0	0	23
76-80	7	7	1	0	0	0	0	0	15
81-85	5	6	0	0	0	0	0	0	11
86-90	1	2	0	0	0	0	0	0	3
91-95	1	0	0	0	0	0	0	0	1
Unknown	8	48	8	0	1	1	0	0	66
Total	**806**	**486**	**47**	**6**	**7**	**1**	**1**	**4**	**1,358**

Table 11.12 – Victims killed by victim age and road user class not in vehicles travelling at unsafe speed

Victim Age	Driver	Passenger	Pedestrian	Other	Total
3	0	0	1	0	1
14	0	1	0	0	1
15	0	1	0	0	1
17	1	0	0	0	1
19	0	2	0	0	2
21	0	0	1	0	1
22	1	0	0	0	1
31-35	1	0	0	0	1
36-40	2	0	1	0	3
41-45	2	0	1	1	4
56-60	1	0	0	0	1
61-65	2	0	0	0	2
71-75	0	1	0	0	1
76-80	0	0	2	0	2
81-85	1	1	0	0	2
Total	**11**	**6**	**6**	**1**	**24**

Table 11.13 – Unsafe speed related collisions by speed limit and road jurisdiction – City/Municipal street

Speed Limit	Injury	Fatal	Total
Posted at 10 km/hr	2	0	2
Posted at 20 km/hr	6	0	6
Posted at 30 km/hr	48	0	48
Posted at 40 km/hr	14	0	14
Posted at 50 km/hr	1032	23	1055
Posted at 60 km/hr	175	1	176
Posted at 70 km/hr	15	0	15
Posted at 80 km/hr	48	1	49
Posted at 90 km/hr	4	0	4
Posted at 100 km/hr	2	0	2
Posted at 110 km/hr	1	0	1
Advisory - 10 km/hr	3	0	3
Advisory - 20 km/hr	4	0	4
Advisory - 30 km/hr	31	0	31
Advisory - 40 km/hr	5	0	5
Advisory - 50 km/hr	97	4	101
Advisory - 60 km/hr	6	0	6
Advisory - 70 km/hr	1	0	1
Advisory - 80 km/hr	0	1	1
Special - 20 km/hr	1	0	1
Special - 30 km/hr	4	0	4
Special - 50 km/hr	3	0	3
Special - 80 km/hr	0	1	1
Other	7	1	8
Unknown	96	0	96
Total	**1,605**	**32**	**1,637**

Table 11.14 – Unsafe speed related collisions by speed limit and road jurisdiction – Provincial highway

Speed Limit	Injury	Fatal	Total
Posted at 10 km/hr	6	0	6
Posted at 20 km/hr	2	1	3
Posted at 30 km/hr	1	0	1
Posted at 50 km/hr	142	5	147
Posted at 60 km/hr	134	7	141
Posted at 70 km/hr	40	1	41
Posted at 80 km/hr	222	14	236
Posted at 90 km/hr	147	16	163
Posted at 100 km/hr	161	11	172
Posted at 110 km/hr	59	2	61
Advisory - 10 km/hr	1	0	1
Advisory - 100 km/hr	1	0	1
Advisory - 30 km/hr	18	1	19
Advisory - 40 km/hr	36	2	38
Advisory - 50 km/hr	27	2	29
Advisory - 60 km/hr	43	3	46
Advisory - 70 km/hr	6	1	7
Advisory - 80 km/hr	2	1	3
Special - 40 km/hr	1	0	1
Special - 50 km/hr	3	0	3
Special - 60 km/hr	2	0	2
Unknown	54	0	54
Total	**1,108**	**67**	**1,175**

Table 11.15 – Unsafe speed related collisions by speed limit and road jurisdiction – Rural road

Speed Limit	Injury	Fatal	Total
Posted at 10 km/hr	1	0	1
Posted at 20 km/hr	1	0	1
Posted at 30 km/hr	3	1	4
Posted at 40 km/hr	4	0	4
Posted at 50 km/hr	83	9	92
Posted at 60 km/hr	52	4	56
Posted at 70 km/hr	12	1	13
Posted at 80 km/hr	51	4	55
Posted at 90 km/hr	4	0	4
Advisory - 20 km/hr	1	0	1
Advisory - 30 km/hr	5	1	6
Advisory - 40 km/hr	2	0	2
Advisory - 50 km/hr	7	0	7
Advisory - 60 km/hr	6	0	6
Advisory - 70 km/hr	0	1	1
Advisory - 80 km/hr	3	0	3
Special - 50 km/hr	0	1	1
Special - 80 km/hr	4	0	4
Other	3	0	3
Unknown	41	1	42
Total	**283**	**23**	**306**

Motorcycles In 1999 Collisions

SECTION 12

There were 56,721 motorcycles licensed in British Columbia in 1999. The number of motorcycles licensed showed an increase of 1.3% from 1998.

In 1999, drivers licensed to operate motorcycles totaled 206,813, a 1.3% increase from the previous year.

The number of reported motorcycle drivers killed was 28 in 1999. One motorcycle passenger was killed during the year. Among the casualties wearing helmets at the time of crash, 22 out of 519 (4.2%) were killed. Among those without helmets 3 out of 22 (13.6%) were killed. The difference in the magnitude of this ratio argues for the effectiveness of motorcycle helmets in protecting against fatal injury. Among motorcyclists with non-fatal injuries, 33.3% of those not wearing a helmet suffered injuries to the head or entire body. Among those wearing a helmet, 13.3% suffered head or entire body injuries.

The top five contributing factors assigned to motorcycle drivers (as a percentage of total motorcycle collisions) were, in order of magnitude:

1. Unsafe speed (19.4%);
2. Driving without due care (19.1%)
3. Driver inexperience (13.0%);
4. Alcohol involvement (6.7%);
5. Improper passing (4.8%).

The top five contributing factors assigned to other drivers colliding with motorcycles(as a percentage of total motorcycle collisions) were, in order of magnitude:

1. Failing to yield to right of way (19.4%);
2. Driving without due care (9.04%);
3. ImproperTurning (5.8%);
4. Driver Inexperience (2.0%);
5. Following too closely (1.8%)

The 'primary accident occurrence' is the action taken by the vehicles at the time of the collision. The most common occurrences for motorcycle collisions were off-road right (15.7%) followed by right angle at intersections (12.4%), rear-end collisions (12.4%) and left turn across oncoming traffic. In 70% of all casualty collisions, the motorcyclist was going straight ahead.

Table 12.01 – Motorcycle collisions and victims by month*

	Collisions			Victims		
Month	**Injury**	**Fatal**	**Total**	**Injured**	**Killed**	**Total**
January	6	0	6	6	0	6
February	12	1	13	15	1	16
March	23	0	23	29	0	29
April	58	3	61	73	3	76
May	62	2	64	81	2	83
June	76	4	80	101	4	105
July	123	6	129	147	6	153
August	116	3	119	137	3	140
September	107	4	111	120	4	124
October	60	2	62	83	3	86
November	9	0	9	10	0	10
December	8	1	9	9	1	10
Total	**660**	**26**	**686**	**811**	**27**	**838**

* Victims include both motorcyclists and occupants of involved motor vehicles and pedestrians.

Figure 12.01 – Motorcycle collisions and victims by month

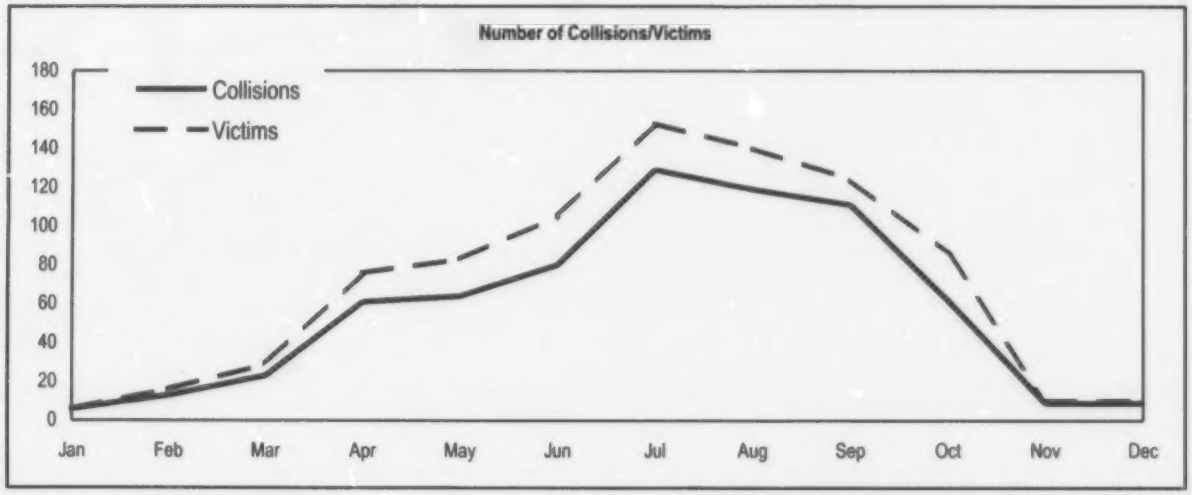


Table 12.02 – Contributing factors in motorcycle collisions – Motorcycle driver factors only: By number of Collisions

Contributing Factors	Injury	Fatal	Total	% of Total Motorcycle Collisions
Unsafe Speed	122	11	133	19.39
Driving Without Due Care	118	13	131	19.10
Driver Inexperience	88	1	89	12.97
Alcohol Involvement	37	9	46	6.71
Improper Passing	32	1	33	4.81
Following too Closely	30	2	32	4.66
Failing to Yield Right of Way	24	2	26	3.79
Wild Animal	22	1	23	3.35
Driving on Wrong Side of Road	20	2	22	3.21
Avoiding Veh/Ped/Cycle	20	1	21	3.06
Obstruction/Debris on Road	18	1	19	2.77
Ignoring Traffic Control Device	17	1	18	2.62
Weather Condition	13	1	14	2.04
Improper Turning	10	0	10	1.46
Other*	252	4	256	37.32
Unknown	37	1	38	5.54

Note: The figures shown above represent the contributing factors assigned to the motorcycle drivers involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in the data presented in this table. For example, a collision attributed to alcohol involvement and careless driving would be counted above as both an alcohol related collision, and a collision involving 'driving without due care'. "Percent of Total"represents the occurrence of the collisions as a percentage of total motorcycle casualty collisions recorded in British Columbia in 1999

* "Other" includes total collisions with less than 10 occurrence of a factor.

Figure 12.02 – Top five contributing factors in 1999 motorcycle collisions (motorcycle driver factors only) as a percentage of total motorcycle collisions

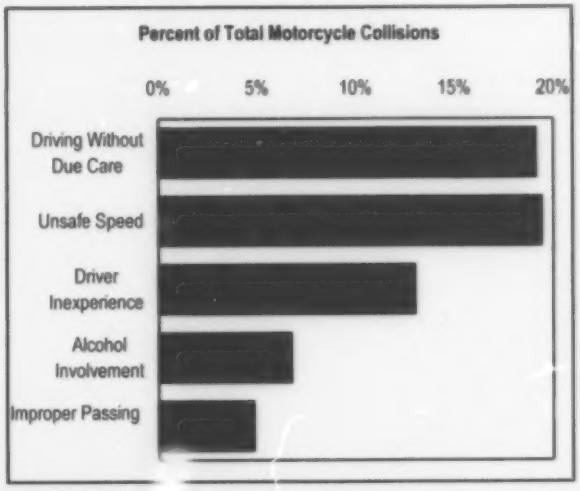


Table 12.03 – Contributing factors in motorcycle collisions – Other driver factors only: By number of Collisions

Contributing Factors	Injury	Fatal	Total	% of Total Motorcycle Collisions
Failing to Yield Right of Way	131	1	132	19.24
Driving Without Due Care	62	0	62	9.04
Improper Turning	39	1	40	5.83
Driver Inexperience	14	0	14	2.04
Following too Closely	12	0	12	1.75
Visibility Impaired	9	0	9	1.31
Alcohol Involvement	8	0	8	1.17
Ignoring Traffic Control Device	7	1	8	1.17
Cutting In	7	0	7	1.02
Other*	93	0	93	13.56
Unknown	19	1	20	2.92

Note: The figures shown above represent the contributing factors assigned to the drivers, other than motorcycle drivers, involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in the data presented in this table. For example, a collision attributed to alcohol involvement and careless driving would be counted above as both an alcohol related collision, and a collision involving driving without due care'. "Percent of Total"represents the occurrence of the collisions as a percentage of total motorcycle casualty collisions recorded in British Columbia in 1999

* "Other" includes total collisions with less than 7 occurrence of a factor.

Figure 12.03 – Top five contributing factors in 1999 motorcycle collisions (other driver factors only) as a percentage of total motorcycle collisions

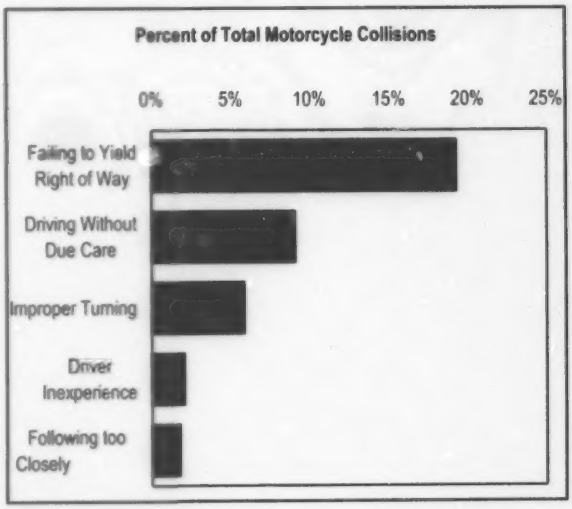


Table 12.04 – Motorcycle collisions by primary collision occurrence

Primary Collision Occurrence	Injury	Fatal	Total	% of Total
Off Road Right	99	9	108	15.74
Rear End	83	2	85	12.39
Intersection - Right Angle	84	1	85	12.39
Left Turn-Across Oncoming Traffic	67	3	70	10.20
Off Road Left	43	4	47	6.85
Overtaking	24	0	24	3.50
Left Turn - Head On	23	0	23	3.35
Head On	17	2	19	2.77
Side Swipe-Opposite Direction	17	1	18	2.62
Right Turn-Opposite Direction	6	0	6	0.87
Left Turn - One Way	6	0	6	0.87
Right Turn - Same Direction	4	0	4	0.58
Right Turn - Head On	3	0	3	0.44
Right Turn - Rear End	2	0	2	0.29
One Way Street	2	0	2	0.29
Backing Up	1	0	1	0.15
Other	146	4	150	21.87
Unknown	33	0	33	4.81
Total	**660**	**26**	**686**	**100**

Table 12.05 – Pre-collision action by collision type in motorcycle collisions: Motorcycle drivers

Pre-Collision Action	Injury	Fatal	Total	% of Total
Going Straight Ahead	474	17	491	70.14
Skidding	34	4	38	5.43
Making Right Turn	34	0	34	4.86
Overtaking	25	3	28	4.00
Making Left Turn	21	1	22	3.14
Slowing or Stopping	21	1	22	3.14
Stopped in Traffic	13	0	13	1.86
Changing Lanes	10	0	10	1.43
Swerving	9	1	10	1.43
Yaw	3	1	4	0.57
Starting in Traffic	3	0	3	0.43
Avoiding Object on Road	3	0	3	0.43
Entering Parked Position	2	0	2	0.29
Merging	2	0	2	0.29
Making U Turn	1	0	1	0.14
Starting from Parked position	1	0	1	0.14
Spinning	1	0	1	0.14
Other	9	0	9	1.29
Unknown	6	0	6	0.86
Total	**672**	**28**	**700**	**100**

Table 12.06 – Pre-collision action by collision type in motorcycle collisions: Other drivers

Pre-Collision Action	Injury	Fatal	Total	% of Total
Making Left Turn	159	4	163	37.73
Going Straight Ahead	135	6	141	32.64
Stopped in Traffic	29	0	29	6.71
Making Right Turn	21	0	21	4.86
Slowing or Stopping	17	0	17	3.94
Making U Turn	10	0	10	2.31
Changing Lanes	7	1	8	1.85
Starting from Parked position	7	0	7	1.62
Overtaking	6	0	6	1.39
Starting in Traffic	5	0	5	1.16
Merging	3	0	3	0.69
Swerving	3	0	3	0.69
Parked legally	2	0	2	0.46
Avoiding Object on Road	1	1	2	0.46
Backing	2	0	2	0.46
Skidding	1	0	1	0.23
Other	6	0	6	1.39
Unknown	6	0	6	1.39
Total	**420**	**12**	**432**	**100%**

Table 12.07 – Collision location by collision type in motorcycle collisions

Collision Location	Injury	Fatal	Total	% of Total
Between Intersection:Exchanges	290	18	308	44.90
At intersection	252	6	258	37.61
Intersection of Road & Driveway or Alley	49	2	51	7.43
Off Highway	17	0	17	2.48
Parking Lot:Single/Multilevel	9	0	9	1.31
Bridge	8	0	8	1.17
Exit Ramp	7	0	7	1.02
Entrance Ramp	5	0	5	0.73
Entrance Intersection	3	0	3	0.44
Entrance Acceleration Lane	2	0	2	0.29
Industrial Road	2	0	2	0.29
Other	8	0	8	1.17
Unknown	8	0	8	1.17
Total	**660**	**26**	**686**	**100%**

Table 12.08 – Motorcycle collisions by roadway surface condition

Roadway Surface Condition	Injury	Fatal	Total	% of Total
Dry	598	24	622	90.67
Wet	55	2	57	8.31
Muddy	1	0	1	0.15
Other	2	0	2	0.29
Unknown	4	0	4	0.58
Total	**660**	**26**	**686**	**100%**

Table 12.09 – Motorcycle collisions by lighting condition

Lighting Condition	Injury	Fatal	Total	% of Total
Daylight	489	15	504	74.45
Dark/Some Illumination	57	4	61	9.01
Dark/No Illumination	31	5	36	5.32
Dusk	35	0	35	5.17
Dark/Full Illumination	34	1	35	5.17
Dawn	6	0	6	0.89
Unknown	8	1	9	1.33
Total	**652**	**25**	**677**	**100%**

Table 12.10 – Motorcycle collisions by weather condition

Weather condition	Injury	Fatal	Total	% of Total
Clear	484	17	501	73.03
Cloudy	142	8	150	21.87
Raining	26	1	27	3.94
Hail	1	0	1	0.15
Smog/Smoke	1	0	1	0.15
Strong Wind	1	0	1	0.15
Unknown	5	0	5	0.73
Total	**660**	**26**	**686**	**100%**

Table 12.11 – Motorcycle collisions by time of day

Time	Injury	Fatal	Total	% of Total
0000-0059	7	2	9	1.31
0100-0159	8	2	10	1.46
0200-0259	10	0	10	1.46
0300-0359	2	2	4	0.58
0400-0459	0	0	0	0.00
0500-0559	4	0	4	0.58
0600-0659	6	0	6	0.87
0700-0759	11	4	15	2.19
0800-0859	21	0	21	3.06
0900-0959	13	1	14	2.04
1000-1059	28	2	30	4.37
1100-1159	29	1	30	4.37
1200-1259	37	0	37	5.39
1300-1359	44	1	45	6.56
1400-1459	42	1	43	6.27
1500-1559	35	0	35	5.10
1600-1659	65	0	65	9.48
1700-1759	55	2	57	8.31
1800-1859	50	0	50	7.29
1900-1959	55	4	59	8.60
2000-2059	37	1	38	5.54
2100-2159	38	1	39	5.69
2200-2259	22	0	22	3.21
2300-2359	24	2	26	3.79
Unknown	17	0	17	2.48
Total	**660**	**26**	**686**	**100%**

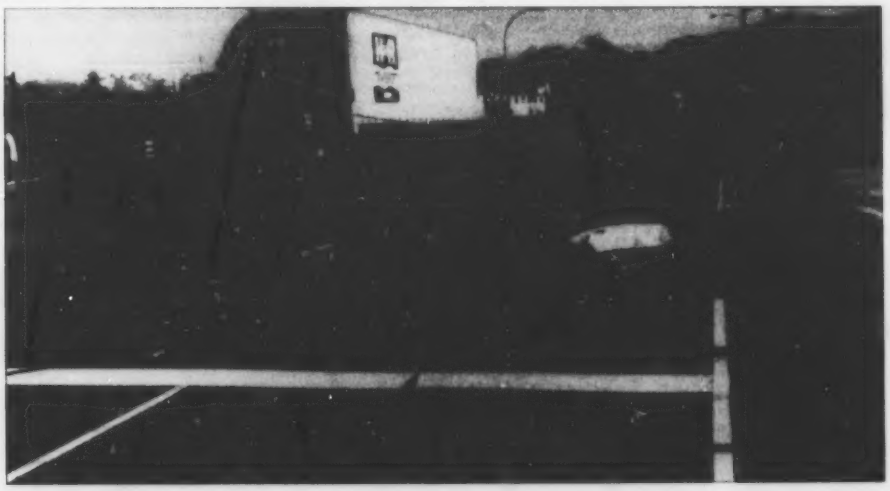


Table 12.12 – Motorcycle collisions by driver age – Motorcycle drivers only

Age	Injury	Fatal	Total	% of Total
12	2	0	2	0.29
13	1	0	1	0.15
14	3	0	3	0.44
15	3	0	3	0.44
16	3	0	3	0.44
17	5	1	6	0.88
18	11	1	12	1.76
19	20	0	20	2.93
20	25	3	28	4.11
21	27	2	29	4.25
22	35	0	35	5.13
23	24	1	25	3.67
24	20	2	22	3.23
25	26	0	26	3.81
26-30	88	5	93	13.64
31-35	78	1	79	11.58
36-40	68	2	70	10.26
41-45	76	3	79	11.58
46-50	67	2	69	10.12
51-55	32	1	33	4.84
56-60	21	1	22	3.23
61-65	7	1	8	1.17
66-70	4	0	4	0.59
71-75	4	0	4	0.59
76-80	1	0	1	0.15
Unknown	5	0	5	0.73
Total	**656**	**26**	**682**	**100%**

Figure 12.04 – Drivers involved in motorcycle collisions by age group – Motorcycle drivers only

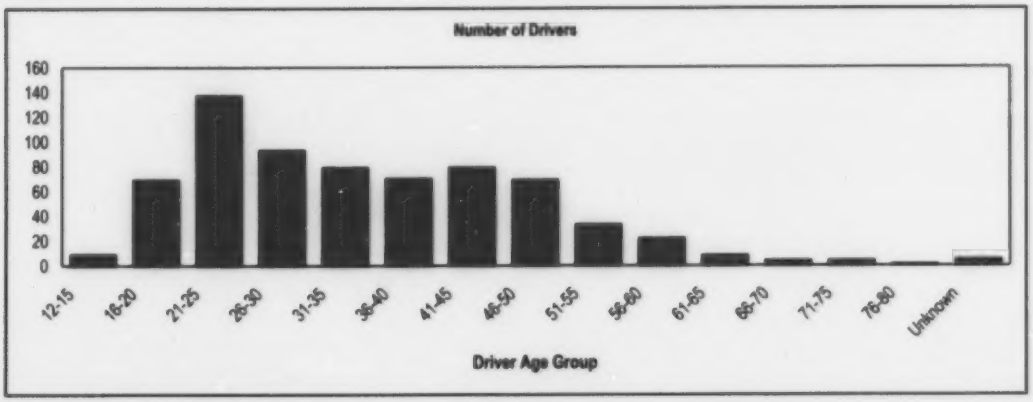


Table 12.13 – Motorcycle collisions by driver age – Other driver involved

Age	Injury	Fatal	Total	% of Total
14	0	1	1	0.23
16	5	0	5	1.15
17	15	0	15	3.46
18	9	0	9	2.08
19	14	0	14	3.23
20	6	1	7	1.62
21	18	0	18	4.16
22	8	0	8	1.85
23	6	1	7	1.62
24	10	0	10	2.31
25	6	1	7	1.62
26-30	45	1	46	10.62
31-35	46	0	46	10.62
36-40	48	1	49	11.32
41-45	39	2	41	9.47
46-50	43	0	43	9.93
51-55	30	1	31	7.16
56-60	14	1	15	3.46
61-65	13	1	14	3.23
66-70	15	1	16	3.70
71-75	8	0	8	1.85
76-80	5	0	5	1.15
81-85	6	0	6	1.39
Unknown	12	0	12	2.77
Total	**421**	**12**	**433**	**100**

Figure 12.05 – Drivers involved in Motorcycle collisions by age group – Other drivers involved

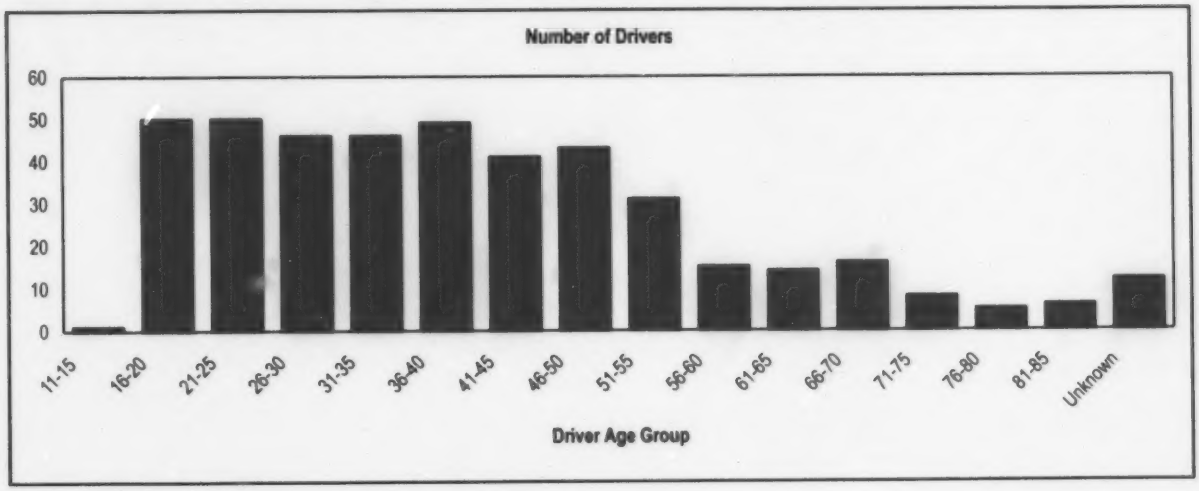


Table 12.14 – Helmet usage by motorcycle drivers and passengers

Safety Equipment	Not Injured			Injured			Killed			Total Involved	% of Total Involved
	Drivers	Passengers	Total	Drivers	Passengers	Total	Drivers	Passengers	Total		
Helmet	16	3	19	423	55	478	21	1	22	519	65.5
No Helmet	1	0	1	13	5	18	3	0	3	22	2.8
Unknown	15	0	15	210	25	235	1	0	1	251	31.7
Total	**32**	**3**	**35**	**646**	**85**	**731**	**25**	**1**	**26**	**792**	**100%**

Note: This report includes occupants in/on parked motorcycle.

Table 12.15 – Motorcycle drivers and passengers injured and killed by helmet use and location of injury

Safety Equipment	Injury Location	Injured			Killed		
		Drivers	Passengers	Total Injured	Drivers	Passengers	Total Killed
Helmet	Head	29	2	31	8	0	8
	Face/Nose	15	3	18	0	0	0
	Eye	1	0	1	0	0	0
	Neck	18	2	20	2	0	2
	Chest	11	2	13	1	0	1
	Back	28	2	30	0	0	0
	Shoulder/Upper Arm	49	4	53	0	0	0
	Elbow/Lower Arm/Hand	61	5	66	0	0	0
	Abdomen/Pelvis	14	3	17	0	0	0
	Hip/Upper Leg	41	8	49	0	0	0
	Knee/Lower Leg/Foot	110	20	130	0	0	0
	Entire Body	31	2	33	9	0	9
	Unknown	15	2	17	1	1	2
	Total Helmet	**423**	**55**	**478**	**21**	**1**	**22**
							0
No Helmet	Head	1	0	1	2	0	2
	Face/Nose	1	0	1	0	0	0
	Chest	0	1	1	0	0	0
	Elbow/Lower Arm/Hand	1	0	1	0	0	0
	Hip/Upper Leg	2	1	3	0	0	0
	Knee/Lower Leg/Foot	5	1	6	0	0	0
	Entire Body	3	2	5	1	0	1
	Total No Helmet	**13**	**5**	**18**	**3**	**0**	**3**
Unknown	Head	15	0	15	0	0	0
	Face/Nose	6	0	6	0	0	0
	Neck	11	1	12	0	0	0
	Chest	6	0	6	1	0	1
	Back	10	3	13	0	0	0
	Shoulder/Upper Arm	23	0	23	0	0	0
	Elbow/Lower Arm/Hand	22	2	24	0	0	0
	Abdomen/Pelvis	9	1	10	0	0	0
	Hip/Upper Leg	22	2	24	0	0	0
	Knee/Lower Leg/Foot	59	8	67	0	0	0
	Entire Body	11	5	16	0	0	0
	Unknown	16	3	19	0	0	0
	Total Unknown	**210**	**25**	**235**	**1**	**0**	**1**
Total		**646**	**85**	**731**	**25**	**1**	**26**

Note: This report includes occupants in/on parked motorcycle.

Table 12.16 – Motorcycle drivers and passengers injured and killed by helmet use and injury type

Safety Equipment	Injury Type	Injured			Killed		
		Drivers	Passengers	Total Injured	Drivers	Passengers	Total Killed
Helmet	Abrasion	92	10	102	0	0	0
	Bruises	99	11	110	0	0	0
	Lacerations	46	6	52	0	0	0
	Bleeding	24	3	27	7	0	7
	Fracture	89	14	103	8	0	8
	Dislocation	16	2	18	0	0	0
	Amputations	1	0	1	0	0	0
	Concussion	7	1	8	0	0	0
	Whiplash	16	3	19	0	0	0
	Other	5	0	5	5	0	5
	Unknown	28	5	33	1	1	2
	Total	**423**	**55**	**478**	**21**	**1**	**22**
No Helmet	Abrasion	5	0	5	0	0	0
	Bruises	2	0	2	0	0	0
	Lacerations	0	1	1	1	0	1
	Bleeding	0	1	1	1	0	1
	Fracture	3	2	5	1	0	1
	Dislocation	1	0	1	0	0	0
	Unknown	2	1	3	0	0	0
	Total	**13**	**5**	**18**	**3**	**0**	**3**
Unknown	Abrasion	42	5	47	0	0	0
	Bruises	48	8	56	0	0	0
	Lacerations	15	0	15	0	0	0
	Bleeding	6	0	6	1	0	1
	Fracture	47	5	52	0	0	0
	Dislocation	9	2	11	0	0	0
	Concussion	10	0	10	0	0	0
	Whiplash	7	1	8	0	0	0
	Other	2	0	2	0	0	0
	Unknown	24	4	28	0	0	0
	Total	**210**	**25**	**235**	**1**	**0**	**1**
Total		**646**	**85**	**731**	**25**	**1**	**26**

Note: This report includes occupants in/on parked motorcycles.

Pedestrians in 1999 Collisions

SECTION 13

There were 1,818 reported traffic collisions that involved pedestrians in 1999. There were 2,015 persons (including occupants of motor vehicles) injured or killed in collisions involving pedestrians, with pedestrians accounting for 94.5% of the casualties.

There were 1,836 pedestrians reported injured in traffic collisions during 1999. The number of pedestrians killed was 68.

Of the 68 pedestrians killed, 22 (27.9%) were over the age of 60, 10 (14.7.8%) were between 21 and 30 and 7 (10.3%) were aged under 16. Of the 1,836 injured, 283 (15.4%) were aged 61 and over, 283 (15.4%) were between 21 and 30 and 284 (15.5%) were under age 16.

Of all pedestrian collisions in 1999, approximately 53.9% occurred at intersections. Notably, 61.2% of all fatal pedestrian collisions occurred at non-intersection locations. Of these fatal collisions, 36.6% of the pedestrians were crossing with no signal, and no crosswalk.

The top five contributing factors assigned to pedestrians (as a percentage of total pedestrian collisions) were, in order of magnitude:

1. Pedestrian error/confusion (16.6%);
2. Alcohol involvement (5.6%);
3. Failing to yield to right of way (3.9%);
4. Ignoring traffic control device (2.0%);
5. Weather condition (1.0%).

The top five contributing factors assigned to involved drivers (as a percentage of total pedestrian collisions) were, in order of magnitude:

1. Failing to yield to right of way (23.9%);
2. Driving without due care (20.1%);
3. Weather condition (10.0%);
4. Backing unsafely (4.5%).
5. Driver Inexperience (3.6%);

Table 13.01 – Pedestrian collisions and victims* by month

	Collisions				Victims			
Month	Injury	Fatal	Total	% Total	Injured	Killed	Total	% Total
January	160	3	163	9%	172	3	175	9%
February	171	9	180	10%	192	9	201	10%
March	150	5	155	9%	178	5	183	9%
April	116	3	119	7%	126	3	129	6%
May	125	4	129	7%	133	5	138	7%
June	127	3	130	7%	141	3	144	7%
July	110	8	118	6%	122	8	130	6%
August	113	3	116	6%	124	3	127	6%
September	131	6	137	8%	148	6	154	8%
October	161	5	166	9%	190	5	195	10%
November	192	6	198	11%	208	6	214	11%
December	195	12	207	11%	213	12	225	11%
Total	**1,751**	**67**	**1,818**	**100%**	**1,947**	**68**	**2,015**	**100%**

* Victims include both pedestrians and occupants of involved motor vehicles.

Figure 13.01 – Pedestrian collisions and victims by month (includes both pedestrians and occupants of involved motor vehicles)

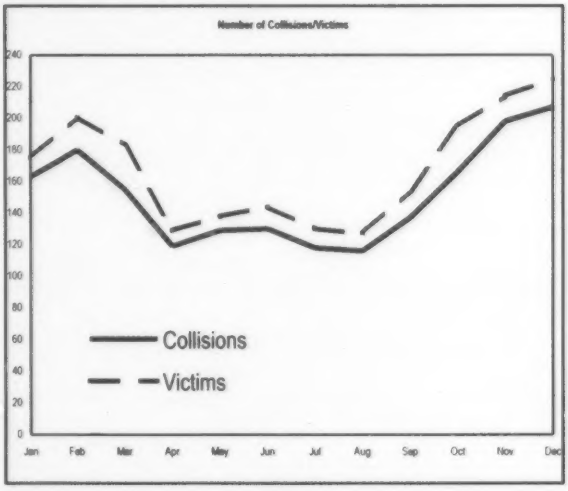


Table 13.02 – Pedestrian collisions by pedestrian action and pedestrian location

Pedestrian Action	At Intersection			Not at Intersection			Unknown			Collisions
	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Total	
Crossing with signal	297	6	303	3	0	3	0	0	0	306
Crossing against signal	104	2	106	7	0	7	0	0	0	113
Crossing - no signal- marked crosswalk	210	7	217	23	1	24	0	0	0	241
Crossing-no signal no crosswalk	179	9	188	287	14	301	2	0	2	491
Walking along highway-with traffic	7	0	7	43	9	52	2	0	2	61
Walking along highway - against traffic	7	0	7	19	4	23	1	0	1	31
Emerging from/behind parked vehicle	7	0	7	79	1	80	1	0	1	88
Child getting on\off school bus	1	0	1	6	0	6	0	0	0	7
Adult getting on\off vehicle	2	0	2	16	0	16	0	0	0	18
Pushing/working on a car	2	0	2	8	1	9	1	0	1	12
Working in roadway	4	0	4	15	0	15	2	0	2	21
Playing in roadway	6	0	6	21	0	21	0	0	0	27
Standing on sidewalk	23	1	24	36	0	36	0	0	0	60
Unknown	31	0	31	25	0	25	13	0	13	69
Other	64	1	65	186	11	197	11	0	11	273
Total	**944**	**26**	**970**	**774**	**41**	**815**	**33**	**0**	**33**	**1,818**

Figure 13.02 – Pedestrian collisions by collision location

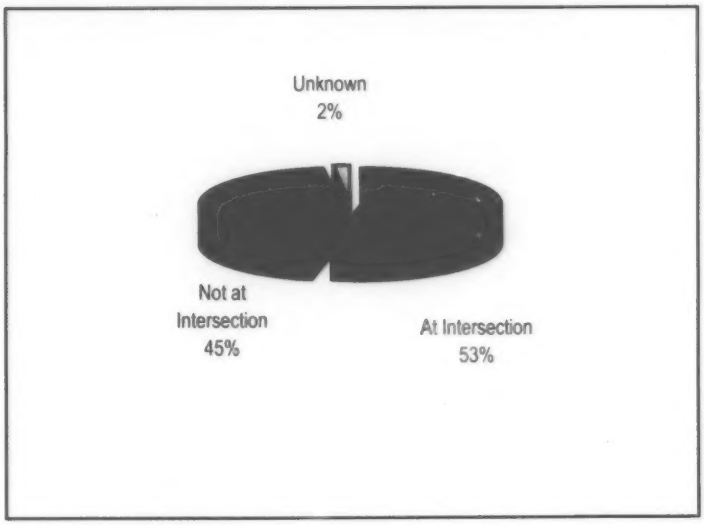
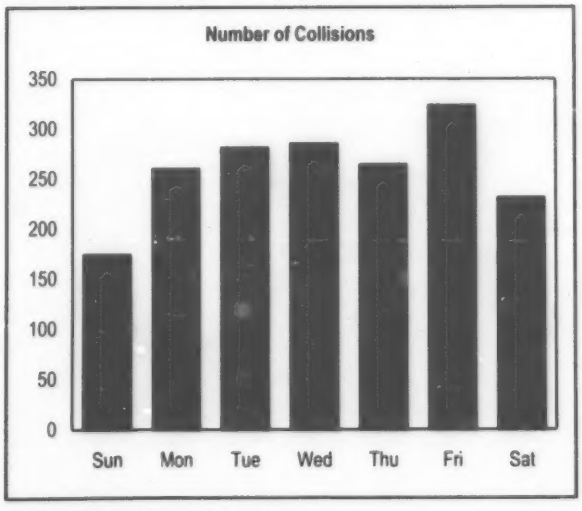


Table 13.03 – Pedestrian collisions: Collision hour by day of week – Injury collisions only

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total	% of Total
0000-0059	5	4	4	4	3	7	9	36	2.06
0100-0159	4	0	0	0	2	3	10	19	1.09
0200-0259	11	1	3	4	3	2	9	33	1.88
0300-0359	6	4	1	1	2	1	3	18	1.03
0400-0459	1	0	0	0	2	1	1	5	0.29
0500-0559	0	0	1	0	1	0	2	4	0.23
0600-0659	2	4	4	2	5	1	1	19	1.09
0700-0759	0	3	11	9	11	4	3	41	2.34
0800-0859	3	11	21	22	18	7	1	83	4.74
0900-0959	3	9	13	7	9	11	6	58	3.31
1000-1059	5	10	17	12	5	11	13	73	4.17
1100-1159	8	15	11	15	9	16	11	85	4.85
1200-1259	2	14	13	15	15	18	11	88	5.03
1300-1359	12	17	11	13	12	31	15	111	6.34
1400-1459	8	14	23	15	13	18	11	102	5.83
1500-1559	6	22	19	19	25	23	12	126	7.20
1600-1659	12	22	15	23	18	27	10	127	7.25
1700-1759	19	31	32	40	31	23	15	191	10.91
1800-1859	13	15	19	16	17	32	19	131	7.48
1900-1959	8	21	17	22	15	27	21	131	7.48
2000-2059	12	12	6	10	14	11	7	72	4.11
2100-2159	7	14	15	8	7	16	10	77	4.40
2200-2259	10	3	8	6	5	9	5	46	2.63
2300-2359	5	2	6	4	8	8	9	42	2.40
Unknown	4	4	3	8	4	5	5	33	1.88
Total	**166**	**252**	**273**	**275**	**254**	**312**	**219**	**1,751**	**100%**

Figure 13.03 – Pedestrian collisions by day of week



Note: Includes both injury and fatal collisions.

Table 13.04 – Pedestrian involved collisions: Collision hour by day of week – Fatal collisions only

Time	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total	% of Total
0000-0059	1	0	0	0	0	0	3	4	5.97
0100-0159	0	0	0	0	0	0	2	2	2.99
0200-0259	2	0	1	2	1	0	1	7	10.45
0300-0359	1	0	0	0	0	0	2	3	4.48
0400-0459	0	0	0	0	0	0	0	0	0.00
0500-0559	0	0	0	0	0	0	0	0	0.00
0600-0659	0	1	0	0	0	1	0	2	2.99
0700-0759	0	0	0	0	0	1	0	1	1.49
0800-0859	0	2	1	1	0	1	0	5	7.46
0900-0959	0	0	0	1	0	1	0	2	2.99
1000-1059	0	0	1	0	0	0	0	1	1.49
1100-1159	0	0	0	0	1	1	0	2	2.99
1200-1259	0	0	1	0	0	0	0	1	1.49
1300-1359	0	0	0	0	0	1	0	1	1.49
1400-1459	1	0	1	0	1	0	2	5	7.46
1500-1559	0	1	0	0	0	2	0	3	4.48
1600-1659	0	1	1	1	0	1	1	5	7.46
1700-1759	1	0	0	2	1	0	0	4	5.97
1800-1859	1	0	0	1	1	1	0	4	5.97
1900-1959	0	2	0	0	2	0	0	4	5.97
2000-2059	1	0	0	1	0	0	0	2	2.99
2100-2159	0	0	1	0	2	0	1	4	5.97
2200-2259	0	1	0	0	0	0	0	1	1.49
2300-2359	0	0	1	1	1	1	0	4	5.97
Total	**8**	**8**	**8**	**10**	**10**	**11**	**12**	**67**	100.00

Table 13.05 – Pedestrian victims injured by age and gender

Age	Male	Female	Total	% of Total
1	2	2	4	0.22
2	7	3	10	0.54
3	5	0	5	0.27
4	4	2	6	0.33
5	6	3	9	0.49
6	7	4	11	0.60
7	10	5	15	0.82
8	9	5	14	0.76
9	11	11	22	1.20
10	15	10	25	1.36
11	10	6	16	0.87
12	12	10	22	1.20
13	26	15	41	2.23
14	26	20	46	2.51
15	15	23	38	2.07
16	23	21	44	2.40
17	16	26	42	2.29
18	17	21	38	2.07
19	20	15	35	1.91
20	15	15	30	1.63
21	13	17	30	1.63
22	21	16	37	2.02
23	22	11	33	1.80
24	9	13	22	1.20
25	17	12	29	1.58
26-30	69	63	132	7.19
31-35	61	68	129	7.03
36-40	71	67	138	7.52
41-45	56	58	114	6.21
46-50	62	53	115	6.26
51-55	48	41	89	4.85
56-60	32	45	77	4.19
61-65	30	27	57	3.10
66-70	36	34	70	3.81
71-75	21	30	51	2.78
76-80	21	26	47	2.56
81-85	18	26	44	2.40
86-90	7	2	9	0.49
91-95	1	4	5	0.27
				0.00
Unknown	65	70	135	7.35
Total	**936**	**900**	**1,836**	**100%**

Note: This report does not include pedestrian victims whose gender was unknown.

Figure 13.04 – Proportion of pedestrian victims by gender

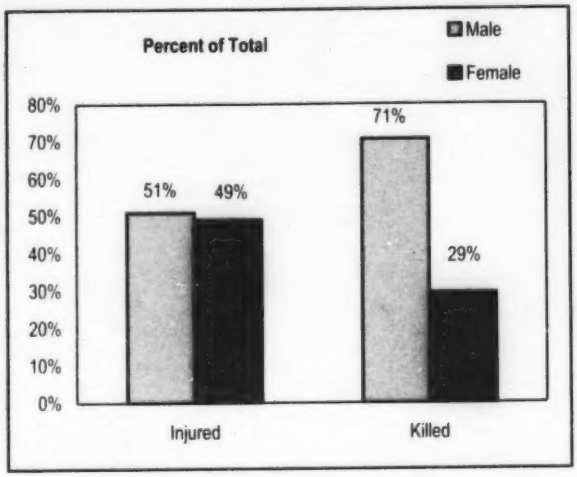


Table 13.06 – Pedestrian victims killed by age and gender

Age	Male	Female	Total	% of Total
1	1	0	1	1.47
3	0	1	1	1.47
7	1	0	1	1.47
10	1	0	1	1.47
11	1	0	1	1.47
12	1	0	1	1.47
14	1	0	1	1.47
17	1	0	1	1.47
21	1	0	1	1.47
22	1	0	1	1.47
23	1	0	1	1.47
24	1	0	1	1.47
25	3	0	3	4.41
26-30	2	1	3	4.41
31-35	4	2	6	8.82
36-40	4	1	5	7.35
41-45	3	1	4	5.88
46-50	4	0	4	5.88
51-55	3	1	4	5.88
56-60	3	3	6	8.82
61-65	1	1	2	2.94
66-70	1	1	2	2.94
71-75	1	1	2	2.94
76-80	2	4	6	8.82
81-85	3	2	5	7.35
86-90	1	0	1	1.47
91-95	0	1	1	1.47
Unknown	2	0	2	2.94
Total	**48**	**20**	**68**	**100**

Note: This report does not include pedestrian victims whose gender was unknown.

Table 13.07 – Contributing factors in pedestrian collisions – Pedestrian factors only: By number of collisio

Contributing Factors	Injury	Fatal	Total	% of Total
Pedestrian Error/Confusion	282	20	302	16.61
Alcohol Involvement	96	6	102	5.61
Failing to Yield Right of Way	71	0	71	3.91
Ignoring Traffic Control Device	36	0	36	1.98
Weather Condition	17	1	18	0.99
Drugs (Illegal)	6	0	6	0.33
Suicide Attempt	2	4	6	0.33
Cutting In	4	0	4	0.22
Avoiding Veh/Ped/Cycle	4	0	4	0.22
Other*	623	1	631	34.71
Unknown	151	3	154	8.47

Note: The figures shown above represent the contributing factors assigned to the pedestrians involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions will occur in the data presented in this table. For example, a collision attributed to both alcohol involvement and weather condition driving will be counted twice above, once under "alcohol involvement" and again under "weather condition". "Percent of Total" represents the occurrence of the collisions as a percentage of total pedestrian casualty collisions recorded in British Columbia in 1999.
* "Other" includes total collisions less than 4 occurrences.

Table 13.08 – Contributing factors in pedestrian involved collisions – Other driver factors only: By number of collisions

Contributing Factors	Injury	Fatal	Total	% of Total
Failing to Yield Right of Way	422	12	434	23.87
Driving Without Due Care	344	22	366	20.13
Weather Condition	173	8	181	9.96
Backing Unsafely	82	0	82	4.51
Pedestrian Error/Confusion	70	6	76	4.18
Driver Inexperience	65	1	66	3.63
Visibility Impaired	61	3	64	3.52
Alcohol Involvement	54	5	59	3.25
Unsafe Speed	40	6	46	2.53
Improper Turning	43	0	43	2.37
Ignoring Traffic Control Device	39	3	42	2.31
Sunlight Glare	29	0	29	1.60
No Driver	24	0	24	1.32
Avoiding Veh/Ped/Cycle	21	2	23	1.27
Artificial Glare	12	0	12	0.66
Improper Passing	9	1	10	0.55
Other*	654	16	670	36.85
Unknown	144	3	147	8.09

Note: The figures shown above represent the contributing factors assigned to drivers, other than pedestrians, involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions will occur in the data presented in this table. For example, a collision attributed to alcohol involvement and careless driving will be counted above as both an alcohol related collision, and a collision involving 'driving without due care'. "Percent of Total" represents the occurrence of the collisions as a percentage of total pedestrian casualty collisions recorded in British Columbia in 1999.
* "Other" includes total collisions less than 10 occurrences.

Figure 13.05 – Top five contributing factors in pedestrian collisions (pedestrian factors only) as a percentage of total pedestrian collisions

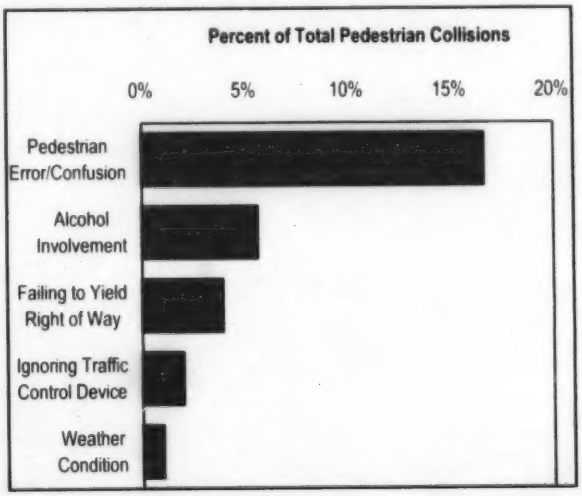


Figure 13.06 – Top five contributing factors in pedestrian collisions (other driver factors only) as a percentage of total pedestrian collisions

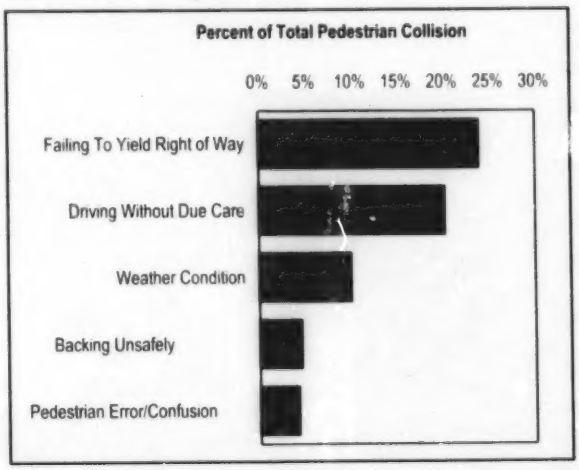


Table 13.09 – Pedestrians injured and killed by age and pedestrian action

Age	X with Signl	X Agnst Signl	X No Signl Mrked Xwlk	X No Signl No Xwlk	Wlking along Hwy with Traffic	Wlking along Hwy Agnst Traffic	Emrg from/ behind vehicle	Child Getting on/off School Bus	Adult Getting on/off Vehicle	Push/ Work on Car	Work in Rdway	Play in Rdway	Stand on Side-walk	Other	Unknown	Total
1	1	0	0	0	0	0	0	0	0	0	0	0	3	1	5	
2	1	0	0	1	0	0	5	0	0	0	0	3	0	0	0	10
3	0	2	0	3	0	0	1	0	0	0	0	0	0	0	0	6
4	0	0	0	2	0	0	0	0	0	0	0	1	0	3	0	6
5	0	1	1	2	0	1	1	0	0	0	0	3	0	0	0	9
6	0	0	1	4	0	1	2	0	0	0	0	2	0	2	1	13
7	1	1	2	7	0	0	4	1	0	0	0	0	0	0	0	16
8	0	1	4	5	0	0	3	0	0	0	0	0	1	0	0	14
9	2	2	1	5	1	1	5	0	0	0	0	3	0	1	1	22
10	2	1	1	9	3	1	2	3	0	0	0	0	0	3	1	26
11	2	1	6	2	0	0	2	0	0	0	0	0	1	3	0	17
12	6	0	5	7	0	0	2	0	0	0	0	1	1	1	0	23
13	2	5	4	18	1	2	1	0	0	0	0	2	0	5	1	41
14	2	8	8	14	2	1	2	0	0	0	0	0	3	5	2	47
15	4	0	6	12	2	0	0	0	0	0	1	1	3	6	4	39
16	3	3	4	16	1	1	1	0	0	0	0	2	0	11	2	44
17	4	1	5	15	1	1	4	0	0	0	0	1	0	10	1	43
18	5	6	8	10	3	0	1	0	0	0	0	1	0	3	1	38
19	4	2	6	10	0	0	0	0	1	0	1	0	3	7	1	35
20	5	2	3	10	0	0	1	0	0	1	1	0	0	5	2	30
21	5	2	6	6	0	0	1	0	1	0	0	1	2	6	1	31
22	9	1	5	8	3	2	0	0	0	0	0	0	2	6	2	38
23	4	2	2	8	1	1	2	0	1	1	0	0	2	10	0	34
24	5	3	1	8	1	0	0	0	0	0	0	0	3	2	0	23
25	4	2	3	4	3	0	1	0	1	0	0	0	2	7	5	32
26-30	19	8	20	34	6	4	6	0	3	2	2	0	4	16	11	135
31-35	34	8	10	28	6	2	6	0	1	1	2	1	10	23	4	136
36-40	28	8	10	37	12	2	2	0	2	1	3	0	6	23	9	143
41-45	23	7	12	27	4	3	3	0	3	0	2	2	11	20	1	118
46-50	27	5	15	35	0	1	2	0	1	1	3	0	10	15	4	119
51-55	21	2	11	32	5	2	3	0	0	1	0	0	2	13	2	94
56-60	18	5	16	18	0	2	5	1	3	0	1	0	3	8	3	83
61-65	12	5	10	13	1	2	3	0	0	0	0	0	2	10	1	59
66-70	17	5	10	21	0	0	2	1	1	0	0	0	2	10	4	73
71-75	10	2	12	15	0	1	2	0	1	0	0	0	4	5	1	53
76-80	12	5	14	12	0	1	0	0	0	1	0	0	2	5	1	53
81-85	6	0	16	14	1	0	4	0	0	0	0	0	2	5	1	49
86-90	1	0	3	4	0	0	1	0	0	0	0	0	0	1	0	10
91-95	1	0	2	0	1	0	0	0	0	0	0	0	1	1	0	6
Unknown	23	10	11	27	5	4	12	2	2	4	5	3	5	49	5	167
Total	**323**	**116**	**254**	**503**	**63**	**36**	**92**	**8**	**21**	**13**	**21**	**27**	**87**	**303**	**73**	**1,940**

Table 13.10 – Pedestrians injured and killed by location of injury

Injury Location	Injured	Killed	Total
Head	354	33	387
Face/Nose	57	0	57
Eye	4	0	4
Neck	32	3	35
Chest	35	2	37
Back	96	0	96
Shoulder/Upper Arm	81	0	81
Elbow/Lower Arm/Hand	113	0	113
Abdomen/Pelvis	52	6	58
Hip/Upper Leg	244	0	244
Knee/Lower Leg/Foot	529	0	529
Entire Body	63	19	82
Unknown	212	5	217
Total	**1,872**	**68**	**1,940**

Table 13.11 – Pedestrians injured and killed by type of injury

Injury Type	Injured	Killed	Total
Abrasion	243	0	243
Bruises	704	1	705
Lacerations	144	0	144
Bleeding	87	15	102
Fracture	262	38	300
Dislocation	15	0	15
Burns	3	0	3
Amputations	2	0	2
Concussion	67	3	70
Whiplash	37	0	37
Other	28	6	34
Unknown	280	5	285
Total	**1,872**	**68**	**1,940**

Bicycles In 1999 Collisions

SECTION 14

A bicycle collision is reportable in British Columbia if it results in injury or death and involves at least one motor vehicle.

There were 898 bicycle collisions reported in 1999. These collisions resulted in 923 casualties (including occupants of motor vehicles). Of these 923 victims, 892 were injured bicycle drivers, and 8 were bicycle drivers killed.

Five of the 8 bicycle drivers killed during 1999 were not wearing bicycle helmets. Six of the 8 bicycle drivers killed were male. Males represented approximately 77.3% of the bicycle drivers injured. Three of the 8 fatalities were under age 16, 2 were aged 20, and 2 were over age 56. The median age of bicyclists injured or killed was 28. There were 220 (25.3%) bicyclists injured or killed under age 16 and 37 (4.3%) aged 61 and over.

The proportion of bicyclists killed to total bicycle casualties was less than 1% for bicyclists wearing a helmet and 2.2% for those without helmets. Among non-helmeted injury victims, 25% suffered head injuries, while only 15% of the helmeted injury victims had head injuries (includes cyclists with injuries to entire body, as well as head alone).

The five top contributing factors assigned to bicycle drivers (as a percentage of total bicycle collisions) were, in order of magnitude:

1. Driving without due care (12.1%);
2. Failing to yield to right of way (11.1%);
3. Driving on the wrong side of the road (10.1%);
4. Ignoring traffic control device (5.2%);
5. Alcohol involvement (3.5%).

The five top contributing factors assigned to other drivers (as a percentage of total bicycle collisions) were, in order of magnitude:

1. Failing to yield to right of way (15.2%);
2. Driving without due care (10.1%);
3. Visibility impaired (2.9%);
4. Weather Conditions (2.5%)
5. Improper Turning (2.2%);

More than half (56.4%) of all bicycle collisions took place at intersections and the most common configuration was intersection – right angle, accounting for 32% of bicycle collisions. The road surface condition was dry for 80.3% of bicycle collisions and 77.6% occurred in daylight. The highest frequency collision time period for bicycle collisions is 3:00 pm to 6:00 pm. Almost 30% (29.6%) of bicycle collisions took place between these hours.

Table 14.01 – Bicycle collisions and victims* by month

Month	Collisions			Victims		
	Injury	Fatal	Total	Injured	Killed	Total
January	53	0	53	53	0	53
February	37	0	37	39	0	39
March	61	0	61	63	0	63
April	68	0	68	75	0	75
May	80	1	81	81	1	82
June	95	1	96	95	1	96
July	114	1	115	115	1	116
August	111	4	115	115	4	119
September	103	1	104	107	1	108
October	86	0	86	89	0	89
November	41	0	41	42	0	42
December	41	0	41	41	0	41
Total	**890**	**8**	**898**	**915**	**8**	**923**

* Victims include both cyclists and occupants of involved motor vehicles.

Figure 14.01 – Bicycle Collisions and victims by month

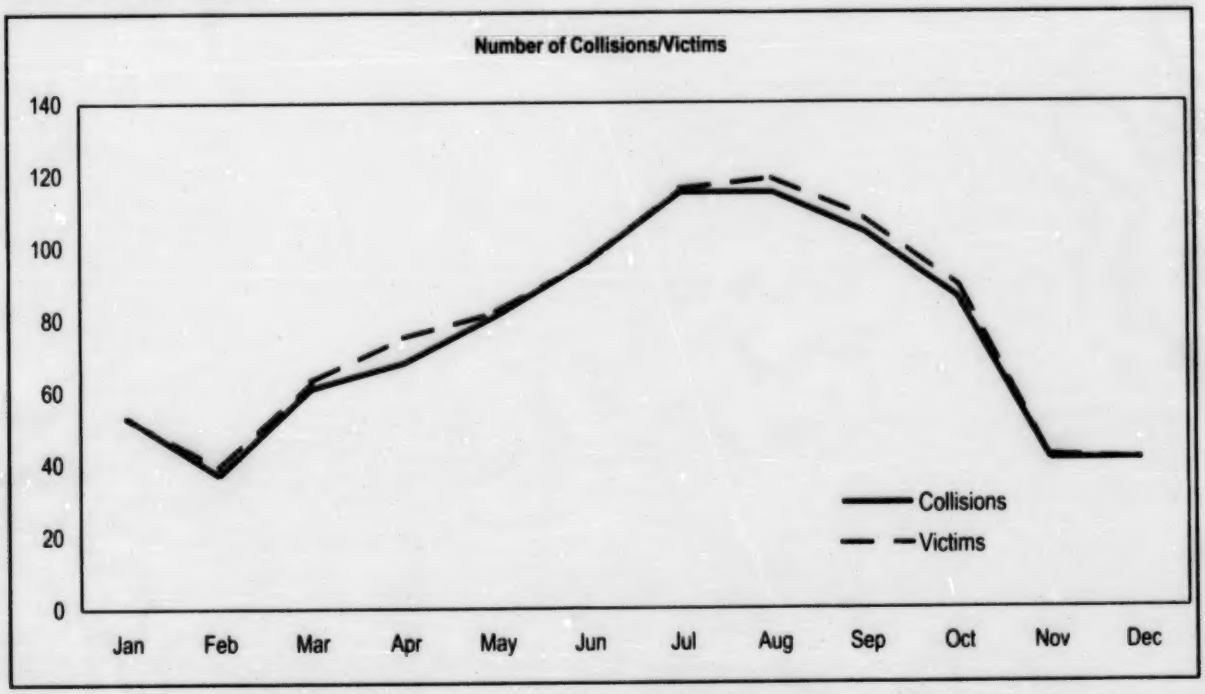


Table 14.02 – Contributing factors in bicycle collisions – Bicycle driver factors only

Contributing Factors	Injury	Fatal	Total	% of Total Bicycle Collisions
Driving Without Due Care	115	3	118	12.05
Failing to Yield Right of Way	109	0	109	11.13
Driving on Wrong Side of Road	97	1	98	10.01
Ignoring Traffic Control Device	49	2	51	5.21
Alcohol Involvement	34	0	34	3.47
Driver Inexperience	30	0	30	3.06
Unsafe Speed	30	0	30	3.06
Weather Condition	22	1	23	2.35
Improper Turning	21	0	21	2.15
Improper Passing	18	0	18	1.84
Cutting In	17	0	17	1.74
Defective Headlights	14	0	14	1.43
Pedestrian Error/Confusion	9	1	10	1.02
Other*	384	1	385	39.33
Unknown	70	0	70	7.15

Note: The figures shown above represent the contributing factors assigned to the bicycle drivers involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in this table. For example, a collision attributed to alcohol involvement and careless driving would be counted above as both an alcohol related collision, and a collision involving 'driving without due care'. "Percent of Total" represents the occurrence of collisions involving the factor as a percentage of total bicycle casualty collisions recorded in British Columbia in 1999.
* "Other" includes total collisions less than 10 occurrences.

Figure 14.02 – Top five contributing factors in 1999 bicycle collisions (bicycle driver factors only) as a percentage of total bicycle collisions

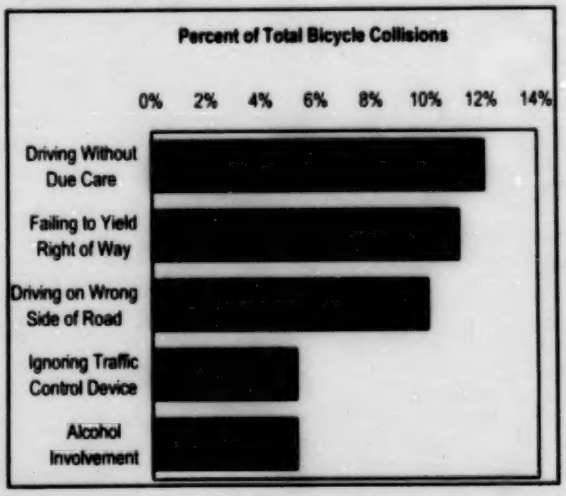


Table 14.03 – Contributing factors in bicycle collisions – Other driver factors only

Contributing Factors	Injury	Fatal	Total	% of Total Bicycle Collisions
Failing to Yield Right of Way	196	1	197	15.17
Driving Without Due Care	130	0	130	10.01
Visibility Impaired	37	0	37	2.85
Weather Condition	33	0	33	2.54
Improper Turning	28	0	28	2.16
Ignoring Traffic Control Device	25	0	25	1.92
Avoiding vehicle/pedestrian/cycle	15	1	16	1.23
Driver Inexperience	15	0	15	1.15
Improper Passing	15	0	15	1.15
Sunlight Glare	13	0	13	1.00
Other*	1054	10	1064	81.91
Unknown	63	0	63	4.85

Note: The figures shown above represent the contributing factors assigned to drivers, other than bicycle drivers, involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in this table. For example, a collision attributed to alcohol involvement and careless driving would be counted above as both an alcohol related collision, and a collision involving driving without due care'. "Percent of Total" represents the collisions involving the factor as a percentage of total bicycle casualty collisions recorded in British Columbia in 1999.
* "Other" includes total collisions less than 10 occurrences.

Figure 14.03 – Top five contributing factors in 1999 bicycle collisions (other driver factors only) as a percentage of total bicycle collisions

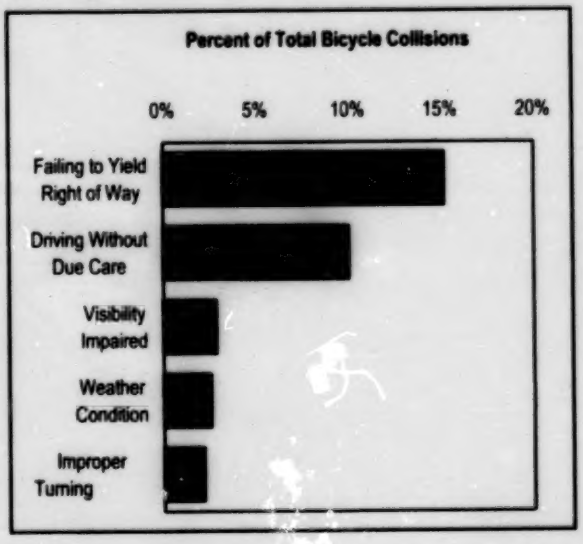


Table 14.04 – Bicycle collisions by primary collision occurrence

Primary Collision Occurrence	Injury	Fatal	Total	% of Total
Intersection - Right Angle	285	3	288	32.07
Left Turn-Across Oncoming Traffic	74	0	74	8.24
Rear End	51	0	51	5.68
Overtaking	43	0	43	4.79
Right Turn - Head On	35	0	35	3.90
Side Swipe-Opposite Direction	24	0	24	2.67
Head On	16	1	17	1.89
Right Turn - Rear End	13	0	13	1.45
Left Turn - Head On	12	0	12	1.34
Left Turn - One Way	10	1	11	1.22
Right Turn - Same Direction	9	0	9	1.00
Right Turn-Opposite Direction	8	0	8	0.89
Backing Up	6	0	6	0.67
Off Road Right	3	0	3	0.33
One Way Street	2	0	2	0.22
Other	247	3	250	27.84
Unknown	52	0	52	5.79
Total	**890**	**8**	**898**	**100**

Table 14.05 – Pre-collision action in bicycle collisions – Bicycles only

Pre-Collision Action	Injury	Fatal	Total	% of Total
Going Straight Ahead	671	4	675	75.00
Making Left Turn	57	1	58	6.44
Making Right Turn	20	0	20	2.22
Changing Lanes	13	1	14	1.56
Starting in Traffic	7	0	7	0.78
Overtaking	7	0	7	0.78
Stopped in Traffic	5	0	5	0.56
Slowing or Stopping	5	0	5	0.56
Merging	4	1	5	0.56
Swerving	3	0	3	0.33
Skidding	3	0	3	0.33
Starting from Parked position	2	0	2	0.22
Parked legally	2	0	2	0.22
Backing	1	0	1	0.11
Other	55	1	56	6.22
Unknown	37	0	37	4.11
Total	**892**	**8**	**900**	**100%**

Table 14.06 – Pre-collision action in bicycle collisions – Other Vehicles

Pre-Collision Action	Injury	Fatal	Total	% of Total
Going Straight Ahead	344	5	349	38.02
Making Right Turn	217	1	218	23.75
Making Left Turn	167	1	168	18.30
Making U Turn	3	0	3	0.33
Starting from Parked position	9	0	9	0.98
Starting in Traffic	23	0	23	2.51
Slowing or Stopping	17	0	17	1.85
Stopped in Traffic	26	0	26	2.83
Parked legally	46	0	46	5.01
Parked Illegally	1	0	1	0.11
Changing Lanes	11	0	11	1.20
Overtaking	12	1	13	1.42
Merging	6	0	6	0.65
Backing	9	0	9	0.98
Skidding	3	0	3	0.33
Swerving	5	0	5	0.54
Other	2	0	2	0.22
Unknown	9	0	9	0.98
Total	**910**	**8**	**918**	**100%**

Table 14.07 – Collision location in bicycle collisions

Collision Location	Injury	Fatal	Total	% of Total
At intersection	502	4	506	56.35
Between Intersection:Exchanges	222	2	224	24.94
Intersection of Road & Driveway or Alley	119	1	120	13.36
Bridge	1	0	1	0.11
Exit Deceleration lane	1	0	1	0.11
Exit Ramp	3	1	4	0.45
Exit Intersection	2	0	2	0.22
Entrance Ramp	1	0	1	0.11
Entrance Intersection	3	0	3	0.33
Off Highway	1	0	1	0.11
Parking Lot:Single/Multilevel	15	0	15	1.67
Railroad crossing	2	0	2	0.22
Other	6	0	6	0.67
Unknown	12	0	12	1.34
Total	**890**	**8**	**898**	**100**

Table 14.08 – Bicycle collisions by roadway surface condition

Roadway Surface Condition	Injury	Fatal	Total	% of Total
Dry	714	7	721	80.29%
Wet	172	1	173	19.27%
Unknown	4	0	4	0.45%
Total	**890**	**8**	**898**	**100%**

Table 14.09 – Bicycle collisions by lighting condition

Lighting Condition	Injury	Fatal	Total	% of Total
Daylight	690	7	697	77.62
Dawn	10	0	10	1.11
Dusk	32	1	33	3.67
Dark/Full Illumination	58	0	58	6.46
Dark/No illumination	10	0	10	1.11
Dark/Some Illumination	84	0	84	9.35
Unknown	6	0	6	0.67
Total	**890**	**8**	**898**	**100%**

Table 14.10 – Bicycle collisions by weather condition

Weather Condition	Injury	Fatal	Total	% of Total
Clear	521	3	524	58.35
Cloudy	237	4	241	26.84
Raining	116	1	117	13.03
Snowing	3	0	3	0.33
Fog	5	0	5	0.56
Strong Wind	2	0	2	0.22
Other	1	0	1	0.11
Unknown	5	0	5	0.56
Total	**890**	**8**	**898**	**100**

Table 14.11 – Bicycle collisions by time of day

Time	Injury	Fatal	Total	% of Total
0000-0059	5	0	5	0.56
0100-0159	3	0	3	0.33
0200-0259	4	0	4	0.45
0300-0359	1	0	1	0.11
0400-0459	3	0	3	0.33
0500-0559	5	0	5	0.56
0600-0659	12	0	12	1.34
0700-0759	33	0	33	3.67
0800-0859	53	0	53	5.90
0900-0959	40	0	40	4.45
1000-1059	32	0	32	3.56
1100-1159	47	1	48	5.35
1200-1259	53	0	53	5.90
1300-1359	55	0	55	6.12
1400-1459	65	0	65	7.24
1500-1559	87	0	87	9.69
1600-1659	88	2	90	10.02
1700-1759	88	1	89	9.91
1800-1859	64	1	65	7.24
1900-1959	55	1	56	6.24
2000-2059	33	1	34	3.79
2100-2159	22	0	22	2.45
2200-2259	17	1	18	2.00
2300-2359	12	0	12	1.34
Unknown	13	0	13	1.45
Total	**890**	**8**	**898**	**100%**

Table 14.12 – Bicycle collision victims by driver age – Bicycle drivers only

Age	Injury	Fatal	Total	% of Total
3	1	0	1	0.11
4	2	0	2	0.22
5	6	1	7	0.78
6	11	0	11	1.22
7	11	0	11	1.22
8	12	0	12	1.33
9	21	0	21	2.33
10	18	1	19	2.11
11	30	0	30	3.33
12	26	0	26	2.89
13	30	0	30	3.33
14	27	2	29	3.22
15	21	0	21	2.33
16	20	0	20	2.22
17	11	0	11	1.22
18	13	0	13	1.44
19	16	0	16	1.78
20	17	2	19	2.11
21	15	0	15	1.67
22	13	0	13	1.44
23	18	0	18	2
24	18	0	18	2
25	18	0	18	2
26-30	111	0	111	12.33
31-35	96	0	96	10.67
36-40	91	0	91	10.11
41-45	65	0	65	7.22
46-50	47	0	47	5.22
51-55	26	0	26	2.89
56-60	14	1	15	1.67
61-65	14	0	14	1.56
66-70	10	0	10	1.11
71-75	5	0	5	0.56
76-80	5	0	5	0.56
81-85	0	1	1	0.11
86-90	1	0	1	0.11
91-95	1	0	1	0.11
Unknown	31	0	31	3.44
Total	**892**	**8**	**900**	**100**

Table 14.13 – Bicycle drivers injured by age and gender in collisions

Age	Male	Female	Total
3	1	0	1
4	1	1	2
5	5	1	6
6	10	1	11
7	11	0	11
8	8	4	12
9	14	7	21
10	14	4	18
11	25	6	31
12	17	7	24
13	22	8	30
14	24	3	27
15	16	5	21
16	13	7	20
17	9	2	11
18	10	3	13
19	13	3	16
20	14	3	17
21	11	4	15
22	8	5	13
23	10	8	18
24	11	7	18
25	12	6	18
26-30	86	25	111
31-35	73	23	96
36-40	68	21	89
41-45	53	11	64
46-50	38	8	46
51-55	24	2	26
56-60	10	4	14
61-65	14	0	14
66-70	8	2	10
71-75	4	2	6
76-80	5	0	5
86-90	1	0	1
91-95	1	0	1
Unknown	21	8	29
Total	**685**	**201**	**886**

Note: This report does not include bicycle drivers whose gender was unknown

Figure 14.05 – Proportion of bicycle collision victims by gender in 1999 collisions

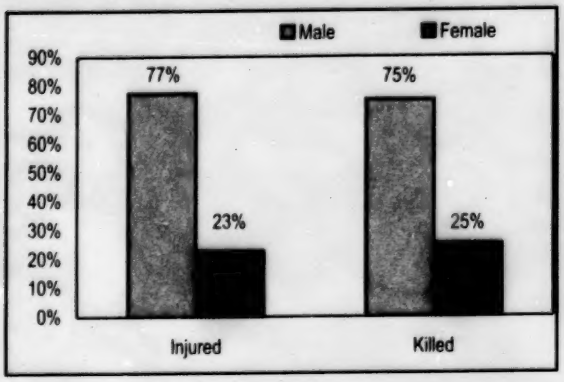


Table 14.14 – Bicycle drivers killed by age and gender in bicycle collisions

Age	Male	Female	Total
5	1	0	1
10	1	0	1
14	2	0	2
20	1	1	2
56-60	1	0	1
81-85	0	1	1
Total	**6**	**2**	**8**

Note: This report does not include bicycle drivers whose gender was unknown.

Table 14.15 – Bicycle drivers injured and killed by helmet use and location of injury

Helmet		Injured	Killed
	Head	41	0
	Face/Nose	18	0
	Eye	1	0
	Neck	21	0
	Chest	12	0
	Back	24	0
	Shoulder/Upper Arm	45	0
	Elbow/Lower Arm/Hand	47	0
	Abdomen/Pelvis	9	0
	Hip/Upper Leg	29	0
	Knee/Lower Leg/Foot	100	0
	Entire Body	17	3
	Unknown	18	0
	Total helmet	**382**	**3**
No Helmet			
	Head	56	4
	Face/Nose	12	0
	Neck	12	0
	Chest	7	0
	Back	12	0
	Shoulder/Upper Arm	21	0
	Elbow/Lower Arm/Hand	23	0
	Abdomen/Pelvis	4	0
	Hip/Upper Leg	19	0
	Knee/Lower Leg/Foot	61	0
	Entire Body	6	1
	Unknown	14	0
	Total No Helmet	**247**	**5**
Unknown			
	Head	28	0
	Face/Nose	12	0
	Neck	4	0
	Chest	6	0
	Back	16	0
	Shoulder/Upper Arm	23	0
	Elbow/Lower Arm/Hand	38	0
	Abdomen/Pelvis	6	0
	Hip/Upper Leg	22	0
	Knee/Lower Leg/Foot	61	0
	Entire Body	6	0
	Unknown	37	0
	Total unknown	**259**	**0**
Total		**888**	**8**

Commercial Vehicles In 1999 Collisions SECTION 15

Definition of Commercial Vehicle

This year, the definition of commercial vehicles in this section has been revised to reflect the classes of vehicles that fall within the Commercial Transport Act of British Columbia. In this year's publication, three classes of vehicles included in the 1998 publication have been deleted. These are general construction vehicles, road construction vehicles and mobile cranes. Their exclusion has a minimal impact on the collision totals because together they accounted for only 14 collisions in 1999. Three classes of vehicles were also added this year. These are emergency vehicles, taxis and school buses. In the 1998 publication, these three classes were the subject of a separate section.

A precise exclusion based on vehicle weight is not possible for some vehicle types. As a result, two groups of vehicles are included in the report as commercial vehicles. One group is defined as vehicles under 10,900 kilograms gross vehicle weight. These include single unit trucks/light, combination unit trucks/light, tow trucks. The other group of vehicles is defined in the database as heavy commercial vehicles (i.e. any single or combination truck unit over 10,900 kilograms gross vehicle weight). These vehicles include: single unit trucks/heavy; combination unit trucks/heavy, combination unit tractors or trailers, combination unit tractors or trailers and pups, log trucks and pole trailers, local transit bus, intercity bus. This group of commercial vehicles are also the subject of a separate section (Section 16) of this publication.

The current definition of commercial vehicles includes a greater number of vehicles than the definition used in the 1998 report. It also differs from the definition used in earlier reports. **Therefore, commercial vehicle collisions reported in 1999 can not be compared with those reported in previous versions (1998 and earlier).**

Summary Statistics

There were 1,893 reported casualty collisions involving commercial vehicles during 1999. Of these collisions, 1,801 were personal injury collisions and 92 were fatal collisions.

The five top contributing factors assigned to commercial vehicle drivers (as a percentage of total commercial vehicle collisions) were, in order of magnitude:

1. Driving without due care (19.2%);
2. Unsafe speed (12.7%);
3. Failing to yield to right of way (10.3%);
4. Weather condition (9.7%);
5. Following too Closely (9.5%).

The five top contributing factors assigned to other drivers (as a percentage of total commercial vehicle collisions) were, in order of magnitude:

1. Driving without due care (26.0%);
2. Failing to yield to right of way (16.9%);
3. Unsafe speed (12.6%);
4. Following too Closely (10.3%);
5. Weather condition (9.9%).

Emergency Vehicle, Taxi and School Bus Collisions

An emergency vehicle is defined, in this report, as any vehicle used to carry rescue or first aid equipment, whether or not actually responding to an emergency. It includes ambulance, police car, fire truck or other vehicles used for the purpose of emergency.

In 1999, there were 141 emergency vehicle collisions. These collisions resulted in 229 injured victims and 3 victims killed.

The top three contributing factors assigned to emergency vehicle drivers were, in order of magnitude:

1. Weather condition;
2. Failing to yield right of way;
3. Driving without due car.

In 1999, there were 2,429 taxis registered for service. There were 250 injury collisions involving taxis in the same year. There were 391 injury victims resulting from these collisions.

The top three contributing factors assigned to taxi drivers were, in order of magnitude:

1. Driving without due care;
2. Failing to yield right of way;
3. Unsafe speed.

A school bus is defined, for the purpose of this report, as a motor vehicle licensed to convey children to or from school. Generally, these are the traditional yellow and black school buses.

A total of 31 collisions involving school buses occurred during 1999. These collisions resulted in 61 persons being injured.

The top three contributing factors assigned to school bus drivers were, in order of magnitude:

1. Driving without due care;
2. Failing to yield right of way;
3. Following too closely.

Table 15.01 – Commercial vehicle collisions and victims by month

	Collisions			Victims		
Month	**Injury**	**Fatal**	**Total Collisions**	**Injured**	**Killed**	**Total Victims**
January	154	4	158	219	4	223
February	144	7	151	225	8	233
March	135	8	143	212	10	222
April	118	7	125	167	9	176
May	134	6	140	219	7	226
June	123	11	134	183	12	195
July	130	9	139	217	10	227
August	151	6	157	213	6	219
September	179	7	186	249	7	256
October	183	11	194	277	12	289
November	172	6	178	257	6	263
December	175	10	185	276	13	289
Total	**1,798**	**92**	**1,890**	**2,714**	**104**	**2,818**

Figure 15.01 – Commercial vehicle collisions and victims by month

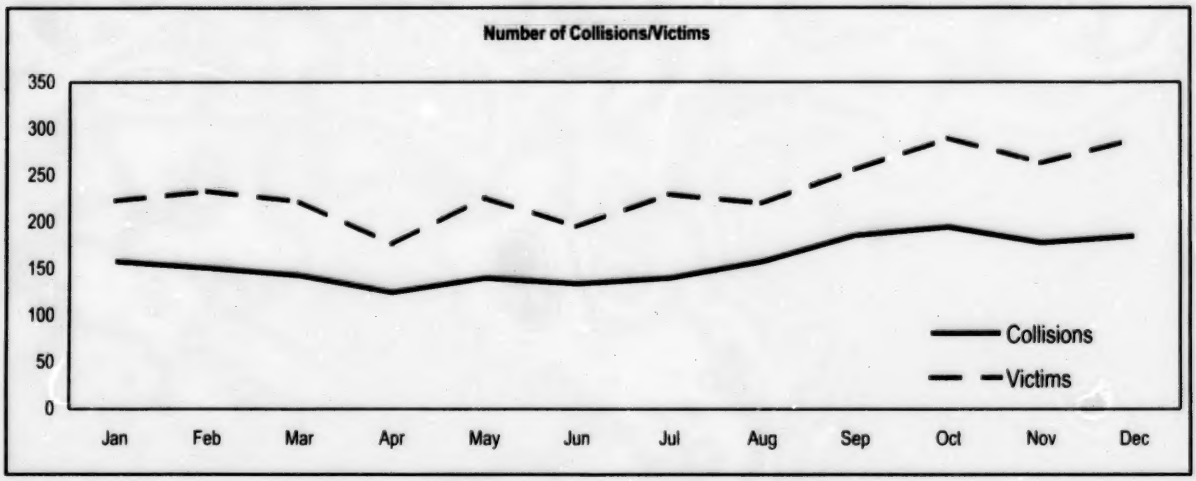


Table 15.02 – Contributing factors in commercial vehicle collisions – Commercial vehicle driver factors only: By number of collisions

Contributing Factors	Injury	Fatal	Total	% of Total Commercial Vehicle Collisions
Driving Without Due Care	332	13	345	19.24
Unsafe Speed	220	8	228	12.72
Failing to Yield Right of Way	181	4	185	10.32
Weather Condition	169	5	174	9.70
Following too Closely	171	0	171	9.54
Alcohol Involvement	78	6	84	4.68
Ignoring Traffic Control Device	59	1	60	3.35
Driver Inexperience	43	4	47	2.62
Improper Turning	42	0	42	2.34
Avoiding vehicle/pedestrian/cycle	29	3	32	1.78
Driving on Wrong Side of Road	21	4	25	1.39
Visibility Impaired	24	1	25	1.39
Fell Asleep	21	2	23	1.28
Improper Passing	21	1	22	1.23
Backing Insanely	20	0	20	1.12
Road Maintenance/Construction	19	1	20	1.12
Insecure Load	18	0	18	1.00
Cutting In	17	0	17	0.95
Wild Animal	15	0	15	0.84
Previous Traffic Collision	13	1	14	0.78
Road/Intersection Design	12	1	13	0.73
Defective Brakes	12	0	12	0.67
Defective Tires	11	0	11	0.61
Oversize Vehicle	10	0	10	0.56
Other*	550	18	568	31.68
Unknown	165	0	165	9.20

Note: The figures shown above represent the contributing factors assigned to the commercial vehicle drivers involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in this table. For example, a collision attributed to alcohol involvement and careless driving would be counted above as both an alcohol related collision, and a collision involving 'driving without due care'. "Percent of Total" represents the collisions involving the factor as a percentage of total commercial vehicle casualty collisions recorded in British Columbia in 1999.

* "Other" includes total collisions less than 10 occurrences.

Figure 15.02 – Top five contributing factors in 1999 commercial vehicle collisions (commercial vehicle driver factors only) as a percentage of total commercial vehicle collisions

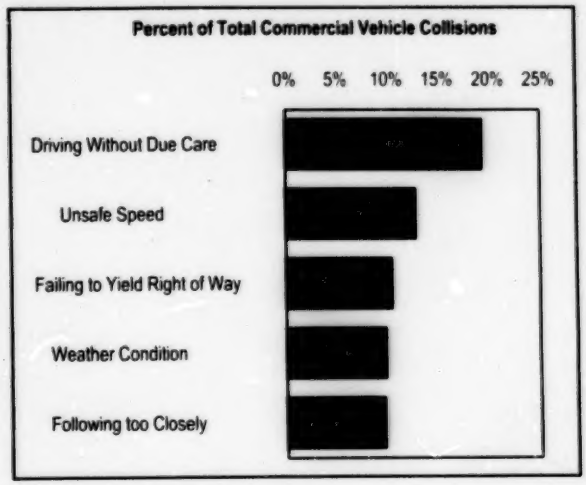


Table 15.03 – Contributing factors in commercial vehicle collisions – Other driver factors only: By number of collisions

Contributing Factors	Injury	Fatal	Total	% of Total Commercial Vehicle Collisions
Driving Without Due Care	443	23	466	25.99
Failing to Yield Right of Way	298	5	303	16.90
Unsafe Speed	212	15	227	12.66
Following too Closely	182	2	184	10.26
Weather Condition	163	14	177	9.87
Alcohol Involvement	126	15	141	7.86
Ignoring Traffic Control Device	118	5	123	6.86
Driver Inexperience	85	0	85	4.74
Improper Turning	64	1	65	3.63
Driving on Wrong Side of Road	41	15	56	3.12
Improper Passing	42	4	46	2.57
Pedestrian Error/Confusion	29	7	36	2.01
Visibility Impaired	33	1	34	1.90
Cutting In	33	0	33	1.84
Avoiding vehicle/pedestrian/cycle	22	1	23	1.28
Fell Asleep	17	5	22	1.23
Sunlight Glare	20	1	21	1.17
Backing Unsafely	20	0	20	1.12
Previous Traffic Collision	14	1	15	0.84
Defective Brakes	14	0	14	0.78
Road Maintenance/Construction	12	2	14	0.78
Defective Tires	10	0	10	0.56
Other*	544	21	565	31.51
Unknown	158	3	161	8.98

Note: The figures shown above represent the contributing factors assigned to drivers, other than commercial vehicle drivers, involved in these collisions.
"Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in this table. For example, a collision attributed to alcohol involvement and careless driving would be counted above as both an alcohol related collision, and a collision involving 'driving without due care'.
"Percent of Total" represents the collisions involving the factor as a percentage of total commercial vehicle casualty collisions recorded in British Columbia in 1999.
* "Other" includes total collisions less than 10 occurrences

Figure 15.03 – Top five contributing factors in 1999 commercial vehicle collisions (other driver factors only) as a percentage of total commercial vehicle collisions

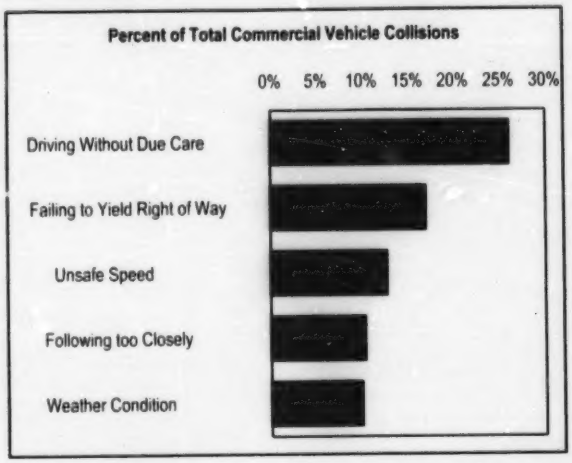


Table 15.04 – Vehicle contributing factors in commercial vehicle collisions: Commercial vehicle factors only

Vehicle Factors	Injury	Fatal	Total
Insecure Load	18	0	18
Defective Brakes	10	0	10
Defective Tires	10	0	10
Oversize Vehicle	10	0	10
Defective Tow Hitch	3	1	4
Defective Turn Signals	3	0	3
Defective Steering	3	0	3
No Driver	3	0	3
Defective Engine	3	0	3
Defective Alternator	2	0	2
Defective Brakelights	2	0	2
Defective Headlights	1	0	1
Defective Suspension	1	0	1
Restraint System	1	0	1
Total	**70**	**1**	**71**

Table 15.05 – Number of commercial vehicles involved in collisions by vehicle type

Vehicle Type	Injury	Fatal	Total	% of Total
Single Unit Truck/ Light	821	16	837	41.39
Single Unit Truck/ Heavy	366	23	389	19.24
Tractor Trailer	258	27	285	14.09
Tractor Trailer & Pup	170	16	186	9.20
Local Transit Bus	117	4	121	5.98
Heavy Truck/Trailer	64	3	67	3.31
Logging Truck & Pole Trailer	44	4	48	2.37
Tow Truck	34	2	36	1.78
Intercity Bus	25	3	28	1.38
Light Truck/Trailer	24	1	25	1.24
Total	**1,923**	**99**	**2,022**	**100**

Note: This report includes parked commercial vehicles.

Table 15.06 – Commercial vehicle collisions by primary collision occurrence

Primary Collision Occurrence	Injury	Fatal	Total	% of Total
Rear End	469	6	475	25.13
Intersection - Right Angle	285	11	296	15.66
Off Road Right	148	7	155	8.20
Off Road Left	126	3	129	6.83
Head On	82	38	120	6.35
Left Turn-Across Oncoming Traffic	115	2	117	6.19
Side Swipe-Opposite Direction	80	7	87	4.60
Overtaking	50	0	50	2.65
Left Turn - Head On	43	0	43	2.28
Backing Up	20	0	20	1.06
Right Turn-Opposite Direction	16	0	16	0.85
Right Turn - Rear End	13	0	13	0.69
Left Turn - One Way	8	0	8	0.42
One Way Street	6	0	6	0.32
Right Turn - Same Direction	4	0	4	0.21
Right Turn - Head On	3	0	3	0.16
Other	266	18	284	15.03
Unknown	64	0	64	3.39
Total	**1,798**	**92**	**1,890**	**100%**

Table 15.07 – Collision location by collision type in commercial vehicle collisions

Collision Location	Injury	Fatal	Total	% of Total
Between Intersection:Exchanges	744	59	803	42.49
At intersection	766	21	787	41.64
Intersection of Road & Driveway or Alley	87	1	88	4.66
Bridge	53	7	60	3.17
Off Highway	32	0	32	1.69
Parking Lot:Single/Multilevel	18	0	18	0.95
Exit Ramp	15	0	15	0.79
Entrance Ramp	13	0	13	0.69
Railroad crossing	9	1	10	0.53
Industrial Road	7	0	7	0.37
Entrance Acceleration Lane	6	0	6	0.32
Tunnel	4	0	4	0.00
Exit Deceleration lane	3	0	3	0.16
Exit Intersection	3	0	3	0.16
Entrance Intersection	2	0	2	0.00
Ferry or Dock	1	0	1	0.05
Transit -Express Lane	1	0	1	0.05
Other	20	3	23	0.00 1.22
Unknown	14	0	14	0.74
Total	**1,798**	**92**	**1,890**	**100**

Table 15.08 – BC driver license class of commercial vehicle driver by vehicle type: Injury collisions

Vehicle Type	Driver License Class																		
	100	160	200	230	260	300	340	346	360	400	460	500	560	700	800	000	Other	Unknown	Total
Single Unit Truck/ Light	46	18	5	3	0	29	3	1	4	18	4	555	72	9	1	7	30	16	821
Single Unit Truck/ Heavy	87	22	1	3	0	23	5	3	13	11	2	139	10	2	0	2	22	21	366
Tractor Trailer	127	38	0	0	0	2	0	1	0	1	0	7	1	0	0	0	63	18	258
Tractor Trailer & Pup	96	24	0	0	0	0	0	0	0	0	0	1	0	0	0	0	41	8	170
Local Transit Bus	14	8	37	7	8	0	0	0	0	9	0	1	1	0	0	0	27	5	117
Heavy Truck/Trailer	34	5	0	0	0	0	0	0	0	0	0	4	1	0	0	0	13	7	64
Logging Truck & Pole Trailer	33	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	3	44
Tow Truck	4	2	0	0	0	1	0	0	0	1	1	20	4	0	0	0	1	0	34
Intercity Bus	6	1	4	4	0	0	0	0	0	6	0	0	0	0	0	0	4	0	25
Light Truck/Trailer	5	1	0	0	0	1	0	0	0	0	0	10	1	0	0	0	3	3	24
Total	**452**	**123**	**47**	**17**	**8**	**56**	**8**	**5**	**17**	**46**	**7**	**737**	**90**	**11**	**1**	**9**	**208**	**81**	**1,923**

Note: This table lists all combinations of valid B.C. license classes. Out-of-province drivers are all grouped under "Other".
Note: "100" to "800" refers to driver licence classes 1 to 8. "340", for example, is a combination of class 3 and class 4

Table 15.09 – BC driver license class of commercial vehicle drivers by vehicle type: Fatal collisions

Vehicle Type	Driver License Class											
	100	160	200	230	300	460	500	560	000	Other	Unknown	Total
Tractor Trailer	11	5	0	0	0	0	0	0	0	2	9	27
Single Unit Truck/ Heavy	6	1	0	0	5	0	10	0	0	1	0	23
Single Unit Truck/ Light	0	0	0	0	1	1	9	2	1	1	1	16
Tractor Trailer & Pup	9	3	0	0	0	0	0	0	0	0	4	16
Logging Truck & Pole Trl	4	0	0	0	0	0	0	0	0	0	0	4
Local Transit Bus	0	0	2	1	0	0	0	0	0	0	1	4
Heavy Truck/Trailer	1	2	0	0	0	0	0	0	0	0	0	3
Intercity Bus	0	1	0	0	0	0	0	0	0	0	2	3
Tow Truck	0	0	1	0	0	0	1	0	0	0	0	2
Light Truck/Trailer	1	0	0	0	0	0	0	0	0	0	0	1
Total	**32**	**12**	**3**	**1**	**6**	**1**	**20**	**2**	**1**	**4**	**17**	**99**

Note: This table lists all combinations of valid B.C. license classes. Out-of-province drivers are all grouped under "Other".
Note: "100" to "800" refers to driver licence classes 1 to 8. "340", for example, is a combination of class 3 and class 4

Table 15.10 – Emergency vehicle, taxi and school bus collisions by month

Month	Emergency Vehicle			Taxi			School Bus		
	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Total
January	17	0	17	18	0	18	2	0	2
February	10	0	10	16	0	16	1	0	1
March	12	0	12	23	0	23	4	0	4
April	11	0	11	22	0	22	3	0	3
May	17	0	17	26	0	26	4	0	4
June	11	1	12	18	0	18	2	0	2
July	12	1	13	26	0	26	1	0	1
August	8	0	8	16	0	16	1	0	1
September	7	0	7	21	0	21	2	0	2
October	17	1	18	22	0	22	3	0	3
November	8	0	8	20	0	20	2	0	2
December	8	0	8	22	0	22	6	0	6
Total	**138**	**3**	**141**	**250**	**0**	**250**	**31**	**0**	**31**

Table 15.11 – Victims in emergency vehicle, taxi and school bus collisions by month

	Emergency Vehicle				Taxi				School Bus			
Month	In Vehicle	Other Vehicle	Pedestrian	Total	In Vehicle	Other Vehicle	Pedestrian	Total	In Vehicle	Other Vehicle	Pedestrian	Total
January	18	11	2	31	12	12	2	26	1	3	0	4
February	3	9	1	13	5	10	3	18	0	0	1	1
March	7	12	0	19	17	20	3	40	11	3	0	14
April	9	9	0	18	19	14	2	35	0	6	0	6
May	13	10	1	24	16	20	2	38	1	2	1	4
June	9	9	1	19	17	13	2	32	0	2	0	2
July	10	9	1	20	16	22	2	40	0	1	0	1
August	6	4	0	10	6	16	1	23	1	0	0	1
September	6	7	0	13	15	19	3	37	1	1	0	2
October	19	16	2	37	18	11	3	32	0	3	0	3
November	6	5	0	11	10	13	3	26	7	2	0	9
December	8	8	1	17	19	23	2	44	6	7	1	14
Total	**114**	**109**	**9**	**232**	**170**	**193**	**28**	**391**	**28**	**30**	**3**	**61**

Note: Victim counts include all casualties in collision.

*Table 15.12 – Contributing factors in emergency vehicle collisions – Emergency vehicle driver factors only: By number of collisions**

Contributing factors	Injury	Fatal	Total	% of Total Emergency Vehicle Collisions
Weather Condition	8	0	8	5.67
Failing to Yield Right of Way	5	0	5	3.55
Driving Without Due Care	4	0	4	2.84
Ignoring Traffic Control Device	3	0	3	2.13
Backing Unsafely	2	0	2	1.42
Driver Inexperience	1	0	1	0.71
Extreme Fatigue	0	1	1	0.71
Following too Closely	1	0	1	0.71
Improper Turning	1	0	1	0.71
Unsafe Speed	1	0	1	0.71
Avoiding Veh/Ped/Cycle	1	0	1	0.71
Pavement Condition	1	0	1	0.71
Visibility Impaired	1	0	1	0.71
Previous Traffic Collision	1	0	1	0.71
Other	57	0	57	40.43
Unknown	12	0	12	8.51

* The figures shown above represent the contributing factors assigned to the emergency vehicle drivers involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in this table. For example, a collision attributed to weather condition and careless driving would be counted above as both weather related collision, and a collision involving 'driving without due care'. "Percent of Total" represents the collisions with the factor as a percentage of total emergency vehicle casualty collisions recorded in British Columbia during 1999.

*Table 15.13 – Contributing factors in emergency vehicle collisions – Other vehicle driver factors only: By number of collisions**

Contributing factors	Injury	Fatal	Total	% of Total Emergency Vehicle Collisions
Driving Without Due Care	38	1	39	27.66
Failing to Yield Right of Way	18	0	18	12.77
Alcohol Involvement	15	0	15	10.64
Ignoring Traffic Control Device	10	1	11	7.80
Unsafe Speed	11	0	11	7.80
Following too Closely	8	0	8	5.67
Ignoring Officer/Flagman/Guard	8	0	8	5.67
Weather Condition	8	0	8	5.67
Backing Unsafely	4	0	4	2.84
Drugs (Illegal)	4	0	4	2.84
Cutting In	3	0	3	2.13
Driver Inexperience	3	0	3	2.13
Pedestrian Error/Confusion	3	0	3	2.13
Improper Turning	3	0	3	2.13
Visibility Impaired	3	0	3	2.13
Fell Asleep	1	1	2	1.42
Driving on Wrong Side of Road	1	1	2	1.42
Extreme Fatigue	1	0	1	0.71
Illness	1	0	1	0.71
Other	52	0	52	36.88
Unknown	7	0	7	4.96

* The figures shown above represent the contributing factors assigned to drivers, other than emergency vehicle drivers, involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collision occurs in this table. For example, a collision attributed to alcohol involvement and careless driving would be counted above as both an alcohol related collision, and a collision involving 'driving without due care'. "Percent of Total" represents the collisions with the factor as a percentage of total emergency vehicle casualty collisions recorded in British Columbia during 1999.

*Table 15.14 – Contributing factors in taxi collisions – Taxi driver factors only: By number of collisions**

Contributing factors	Injury	Fatal	Total	% of Total Taxi Collisions
Driving Without Due Care	46	0	46	18.40
Failing to Yield Right of Way	38	0	38	15.20
Unsafe Speed	18	0	18	7.20
Weather Condition	16	0	16	6.40
Following too Closely	15	0	15	6.00
Ignoring Traffic Control Device	15	0	15	6.00
Improper Turning	7	0	7	2.80
Backing Unsafely	4	0	4	1.60
Improper Passing	4	0	4	1.60
Visibility Impaired	4	0	4	1.60
Cutting In	3	0	3	1.20
Driver Inexperience	2	0	2	0.80
Ignoring Officer/Flagman/Guard	2	0	2	0.80
Road/Intersection Design	2	0	2	0.80
Alcohol Involvement	1	0	1	0.40
Failing to Signal	1	0	1	0.40
Illness	1	0	1	0.40
Unconscious	1	0	1	0.40
Driving on Wrong Side of Road	1	0	1	0.40
Defective Alternator	1	0	1	0.40
Defective Tires	1	0	1	0.40
Sunlight Glare	1	0	1	0.40
Domestic Animal	1	0	1	0.40
Other	56	0	56	22.40
Unknown	11	0	11	4.40

* The figures shown above represent the contributing factors assigned to the taxi drivers involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in the data presented in this table. For example, a collision attributed to weather conditions and careless driving would be counted above as a both weather related collision, and a collision involving 'driving without due care'. "Percent of Total" represents the collisions involving the factor as a percentage of total taxi casualty collisions recorded in British Columbia during 1999.

*Table 15.15 – Contributing factors in taxi collisions – Other vehicle driver factors only: By number of collisions**

Contributing factors	Injury	Fatal	Total	% of Total Taxi Collisions
Failing to Yield Right of Way	43	0	43	17.20
Driving Without Due Care	41	0	41	16.40
Ignoring Traffic Control Device	26	0	26	10.40
Alcohol Involvement	22	0	22	8.80
Unsafe Speed	16	0	16	6.40
Following too Closely	15	0	15	6.00
Driver Inexperience	11	0	11	4.40
Weather Condition	10	0	10	4.00
Improper Turning	7	0	7	2.80
Pedestrian Error/Confusion	6	0	6	2.40
Visibility Impaired	4	0	4	1.60
Improper Passing	3	0	3	1.20
Driving on Wrong Side of Road	3	0	3	1.20
Road/Intersection Design	3	0	3	1.20
Extreme Fatigue	2	0	2	0.80
Cutting In	1	0	1	0.40
Avoiding vehicle/pedestrian/cycle	1	0	1	0.40
Defective Headlights	1	0	1	0.40
Defective Steering	1	0	1	0.40
Defective Tires	1	0	1	0.40
Domestic Animal	1	0	1	0.40
Insufficient Traffic Control	1	0	1	0.40
Other	49	0	49	19.60
Unknown	20	0	20	8.00

* The figures shown above represent the contributing factors assigned to drivers, other than taxi drivers, involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in the data presented in this table. For example, a collision attributed to weather conditions and careless driving would be counted above as a both weather related collision, and a collision involving 'driving without due care'.
"Percent of Total" represents the collisions involving the factor as a percentage of total taxi casualty collisions recorded in British Columbia during 1999.

*Table 15.16 – Contributing factors in school bus collisions – School bus driver factors only: By number of collisions**

Contributing factors	Injury	Fatal	Total	% of Total School Bus Collisions
Driving Without Due Care	9	0	9	29.03
Failing to Yield Right of Way	4	0	4	12.90
Following too Closely	3	0	3	9.68
Weather Condition	3	0	3	9.68
Unsafe Speed	2	0	2	6.45
Driver Inexperience	1	0	1	3.23
Ignoring Traffic Control Device	1	0	1	3.23
Visibility Impaired	1	0	1	3.23
Other	6	0	6	19.35
Unknown	2	0	2	6.45

* The figures shown above represent the contributing factors assigned to the school bus drivers involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in the data presented in this table. For example, a collision attributed to weather condition and careless driving would be counted above as both a weather related collision, and a collision involving 'driving without due care'. "Percent of Total" represents the collisions with the factor as a percentage of total school bus casualty collisions recorded in British Columbia during 1999.

*Table 15.17 – Contributing factors in school bus collisions – Other vehicle driver factors only: By number of collisions**

Contributing factors	Injury	Fatal	Total	% of Total School Bus Collisions
Following too Closely	6	0	6	19.35
Driving Without Due Care	3	0	3	9.68
Driver Inexperience	3	0	3	9.68
Unsafe Speed	3	0	3	9.68
Failing to Yield Right of Way	2	0	2	6.45
Ignoring Traffic Control Device	2	0	2	6.45
Weather Condition	2	0	2	6.45
Alcohol Involvement	1	0	1	3.23
Illness	1	0	1	3.23
Pedestrian Error/Confusion	1	0	1	3.23
Pavement Condition	1	0	1	3.23
Road/Intersection Design	1	0	1	3.23
Other	6	0	6	19.35
Unknown	2	0	2	6.45

* The figures shown above represent the contributing factors assigned to drivers, other than school bus drivers, involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in this table. For example, a collision attributed to alcohol involvement and careless driving will be counted above as both an alcohol related collision, and a collision involving 'driving without due care'.
"Percent of Total" represents the occurrence of collisions involving the factor as a percentage of total school buscasualty collisions recorded in British Columbia during 1999.

Table 15.18 – Emergency vehicle, taxis and school bus collisions by primary collision occurrence

	Emergency Vehicle			Taxi			School Bus		
Primary collision occurrence	**Injury**	**Fatal**	**Total**	**Injury**	**Fatal**	**Total**	**Injury**	**Fatal**	**Total**
Backing Up	5	0	5	2	0	2	0	0	0
Head On	9	1	10	12	0	12	2	0	2
Intersection - Right Angle	45	1	46	76	0	76	6	0	6
Left Turn - Head On	2	0	2	11	0	11	0	0	0
Left Turn - One Way	0	0	0	1	0	1	0	0	0
Left Turn-Across Oncoming Traffic	4	0	4	31	0	31	1	0	1
Off Road Left	3	0	3	1	0	1	1	0	1
Off Road Right	2	1	3	3	0	3	2	0	2
Overtaking	3	0	3	4	0	4	0	0	0
Rear End	27	0	27	57	0	57	13	0	13
Right Turn - Head On	1	0	1	1	0	1	0	0	0
Right Turn - Rear End	0	0	0	3	0	3	0	0	0
Right Turn - Same Direction	1	0	1	3	0	3	0	0	0
Right Turn-Opposite Direction	5	0	5	2	0	2	1	0	1
Side Swipe-Opposite Direction	3	0	3	3	0	3	1	0	1
Other	22	0	22	30	0	30	4	0	4
Unknown	6	0	6	10	0	10	0	0	0
Total	**138**	**3**	**141**	**250**	**0**	**250**	**31**	**0**	**31**

Heavy Commercial Vehicles In 1999 Collisions SECTION 16

Definition of Heavy Commercial Vehicle

As of 1998, the definition of heavy commercial vehicle was revised by adding local transit bus and intercity bus. Therefore, the current definition of a heavy commercial vehicle is: any single or combination truck unit over 10,900 kilograms GVW (gross vehicle weight) as well as local transit bus and intercity bus. Vehicles in this category include:

Single unit truck/heavy;
Tractor-trailer;
Tractor-trailer and pup;
Combination unit truck/heavy;
Logging truck and pole trailer;
Local transit bus;
Intercity bus.

Summary Statistics

There were a total of 1,057 reported casualty collisions involving heavy commercial vehicles in 1999. There were 1,558 injured victims resulting from 981 injury collisions and 87 victims killed from 76 fatal heavy commercial vehicle collisions in 1999.

The top five contributing factors assigned to heavy commercial vehicle drivers (as a percentage of total heavy commercial vehicle collisions) were, in order of magnitude:

1. Driving without due care (17.6%);
2. Unsafe speed (12.6%);
3. Weather condition (8.8%)
4. Following too closely (7.5%);
5. Failing to yield to the right of way (7.1%).

The top five contributing factors assigned to other drivers (as a percentage of total heavy commercial vehicle collisions) were, in order of magnitude:

1. Driving without due care (16.2%);
2. Failing to yield to right of way (8.5%);*
3. Unsafe speed (8.5%);*
4. Weather condition (6.8%);
5. Alcohol Involvement (4.8%);

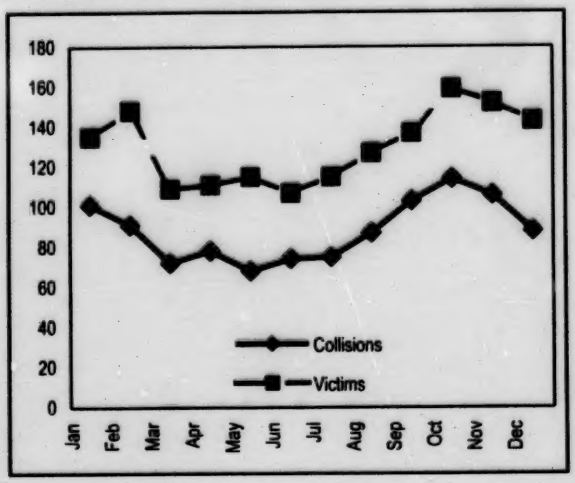
* "Failing to yield to right of way" and "unsafe speed" were tied for second top contributing factor among other drivers colliding with heavy commercial vehicles.

Table 16.01 – Heavy Commercial vehicle collisions and victims* by month

Month	Collisions			Victims in Heavy Commercial Vehicles			Victims not in Heavy Commercial Vehicles			Total Victims
	Injury	Fatal	Total	Injured	Killed	Total	Injured	Killed	Total	
January	97	4	101	83	2	85	48	2	50	135
February	84	7	91	79	4	83	61	4	65	148
March	65	7	72	54	6	60	46	3	49	109
April	72	6	78	54	1	55	50	6	56	111
May	63	5	68	43	2	45	66	4	70	115
June	66	8	74	48	6	54	50	3	53	107
July	67	8	75	67	8	75	39	1	40	115
August	81	6	87	63	6	69	58	0	58	127
September	98	5	103	84	2	86	48	3	51	137
October	106	8	114	81	6	87	69	3	72	159
November	101	5	106	94	1	95	53	4	57	152
December	81	7	88	62	3	65	71	7	78	143
Total	**981**	**76**	**1,057**	**812**	**47**	**859**	**659**	**40**	**699**	**1,558**

* Includes both heavy commercial vehicle occupants and the occupants of other involved motor vehicles.

Figure 16.01 – Heavy commercial vehicle collisions and victims by month



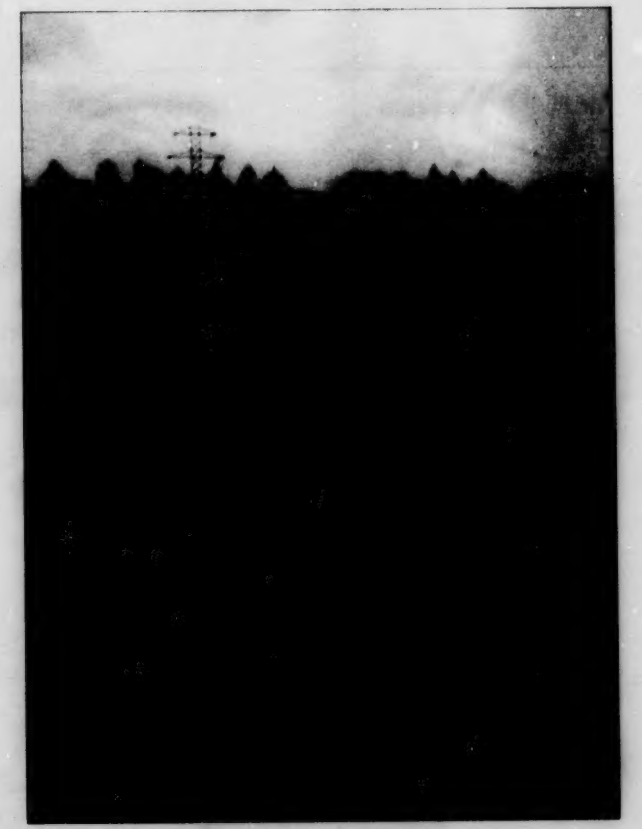


Table 16.02 – Contributing factors in heavy commercial vehicle collisions – Heavy Commercial vehicle driver factors only: By number of collisions

Contributing Factors	Injury	Fatal	Total	% of Total Heavy Commercial Vehicle Collisions
Driving Without Due Care	169	10	179	17.60
Unsafe Speed	123	5	128	12.59
Weather Condition	85	4	89	8.75
Following too Closely	76	0	76	7.47
Failing to Yield Right of Way	69	3	72	7.08
Alcohol Involvement	23	4	27	2.65
Driver Inexperience	22	4	26	2.56
Avoiding Veh/Ped/Cycle	21	3	24	2.36
Ignoring Traffic Control Device	22	1	23	2.26
Improper Turning	18	0	18	1.77
Road Maintenance/Construction	15	1	16	1.57
Insecure Load	15	0	15	1.47
Fell Asleep	12	2	14	1.38
Improper Passing	13	0	13	1.28
Driving on Wrong Side of Road	10	3	13	1.28
Visibility Impaired	12	1	13	1.28
Other*	384	16	400	39.33
Unknown	96	0	96	9.44

Note: The figures shown above represent the contributing factors assigned to the heavy commercial vehicle drivers involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in this table. For example, a collision attributed to alcohol involvement and careless driving would be counted above as both an alcohol related collision, and a collision involving 'driving without due care'. "Percent of Total" represents the collisions involving the factor as a percentage of total heavy commercial vehicle casualty collisions recorded in British Columbia during 1999.
* "Other" includes total collisions less than 10 occurrences.

Table 16.03 – Contributing factors in heavy commercial vehicle collisions – Other driver factors only: By number of collisions

Contributing Factors	Injury	Fatal	Total	% of Total Heavy Commercial Vehicle Collisions
Driving Without Due Care	147	18	165	16.22
Failing to Yield Right of Way	81	5	86	8.46
Unsafe Speed	76	10	86	8.46
Weather Condition	60	9	69	6.78
Alcohol Involvement	42	7	49	4.82
Following too Closely	43	2	45	4.42
Ignoring Traffic Control Device	38	3	41	4.03
Driver Inexperience	29	0	29	2.85
Improper Passing	24	4	28	2.75
Driving on Wrong Side of Road	16	12	28	2.75
Improper Turning	27	1	28	2.75
Visibility Impaired	17	1	18	1.77
Cutting In	13	0	13	1.28
Other*	242	18	260	25.57
Unknown	46	2	48	4.72

Note: The figures shown above represent the contributing factors assigned to drivers, other than heavy commercial vehicle drivers, involved in these collisions. "Collisions" represents the number of collisions in which the contributing factor was present, not the total number of occurrences of the contributing factor. Some double counting of collisions occurs in the data presented in this table. For example, a collision attributed to alcohol involvement and careless driving would be counted above as both an alcohol related collision, and a collision involving 'driving without due care'. "Percent of Total" represents the collisions involving the factor as a percentage of total heavy commercial vehicle casualty collisions recorded in British Columbia during 1999.
* "Other" includes total collisions less than 10 occurrences.

Figure 16.02 – Top five contributing factors in heavy commercial vehicle collisions: Heavy commercial vehicle driver factors only

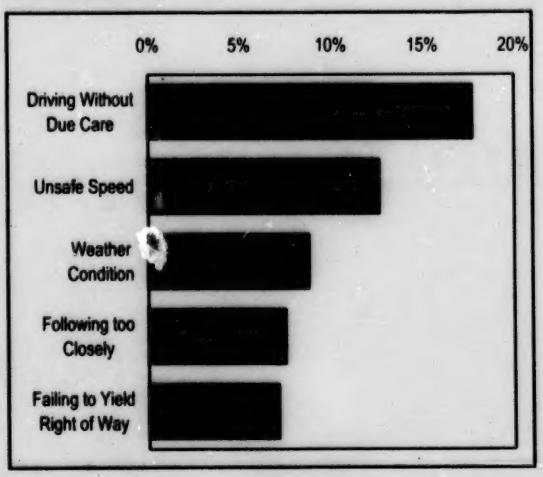


Figure 16.03 – Top five contributing factors in heavy commercial vehicle collisions: Other vehicle driver factors only

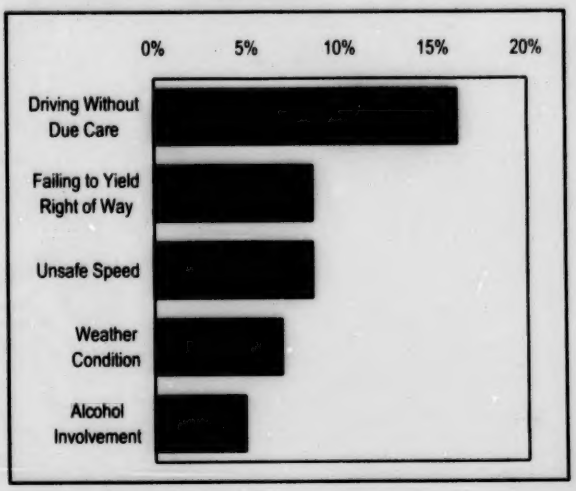


Table 16.04 – Vehicle factors in heavy commercial vehicle collisions: Heavy commercial vehicles only

Vehicle Factors	Injury	Fatal	Total
Insecure Load	15	0	15
Oversize Vehicle	9	0	9
Defective Brakes	6	0	6
Defective Tires	6	0	6
No Driver	3	0	3
Defective Steering	2	0	2
Defective Turn Signals	1	0	1
Defective Tow Hitch	0	1	1
Defective Engine	1	0	1
Defective Suspension	1	0	1
Total	**44**	**1**	**45**

Table 16.05 – Heavy commercial vehicle collisions by primary collision occurrence

Primary Collision Occurrence	Injury	Fatal	Total
Rear End	213	5	218
Intersection - Right Angle	118	9	127
Off Road Right	100	6	106
Off Road Left	86	1	87
Head On	47	31	78
Side Swipe-Opposite Direction	62	7	69
Left Turn-Across Oncoming Traffic	45	2	47
Overtaking	37	0	37
Left Turn - Head On	22	0	22
Backing Up	11	0	11
Right Turn-Opposite Direction	11	0	11
Right Turn - Rear End	7	0	7
One Way Street	6	0	6
Right Turn - Head On	2	0	2
Right Turn - Same Direction	2	0	2
Left Turn - One Way	2	0	2
Other	177	15	192
Unknown	33	0	33
Total	**981**	**76**	**1,057**

Table 16.06 – Collision location in heavy commercial vehicle collisions

Collision Location	Injury	Fatal	Total
Between Intersection:Exchanges	451	49	500
At intersection	348	17	365
Bridge	37	5	42
Intersection of Road & Driveway or Alley	39	1	40
Off Highway	23	0	23
Entrance Ramp	12	0	12
Exit Ramp	8	0	8
Railroad crossing	7	1	8
Entrance Acceleration Lane	6	0	6
Parking Lot:Single/Multilevel	6	0	6
Industrial Road	6	0	6
Tunnel	3	0	3
Exit Deceleration lane	3	0	3
Exit Intersection	3	0	3
Entrance Intersection	2	0	2
Ferry or Dock	1	0	1
Transit -Express Lane	1	0	1
Other	17	3	20
Unknown	8	0	8
Total	**981**	**76**	**1,057**

Table 16.07 – Heavy commercial vehicle collisions by roadway surface condition

Roadway Surface Condition	Injury	Fatal	Total
Dry	556	35	591
Wet	276	25	301
Snow	57	4	61
Ice	53	6	59
Slush	27	6	33
Muddy	5	0	5
Other	3	0	3
Unknown	4	0	4
Total	**981**	**76**	**1,057**

Table 16.08 – Heavy commercial vehicle collisions by lighting condition

Lighting condition	Injury	Fatal	Total
Daylight	645	45	690
Dark/No Illumination	125	17	142
Dark/Some Illumination	101	7	108
Dark/Full Illumination	51	1	52
Dusk	32	2	34
Dawn	24	4	28
Unknown	3	0	3
Total	**981**	**76**	**1,057**

Table 16.09 – Heavy commercial vehicle collisions by weather condition

Weather	Injury	Fatal	Total
Clear	412	28	440
Cloudy	289	20	309
Raining	175	16	191
Snowing	76	9	85
Fog	18	3	21
Strong Wind	2	0	2
Hail	1	0	1
Unknown	8	0	8
Total	**981**	**76**	**1,057**

Table 16.10 – Driver age in heavy commercial vehicle collisions: Heavy commercial vehicle drivers only

Age	Injury	Fatal	Total
17	5	0	5
18	4	0	4
19	11	1	12
20	10	0	10
21	11	1	12
22	12	0	12
23	25	0	25
24	16	0	16
25	11	1	12
26-30	107	12	119
31-35	134	8	142
36-40	170	8	178
41-45	150	16	166
46-50	115	10	125
51-55	102	7	109
56-60	54	10	64
61-65	26	5	31
66-70	24	0	24
71-75	3	0	3
76-80	2	0	2
81-85	3	0	3
Unknown	49	1	50
Total	**1,044**	**80**	**1,124**

Table 16.11 – B.C. driver licence class of heavy commercial vehicle drivers by vehicle type: Injury collisions

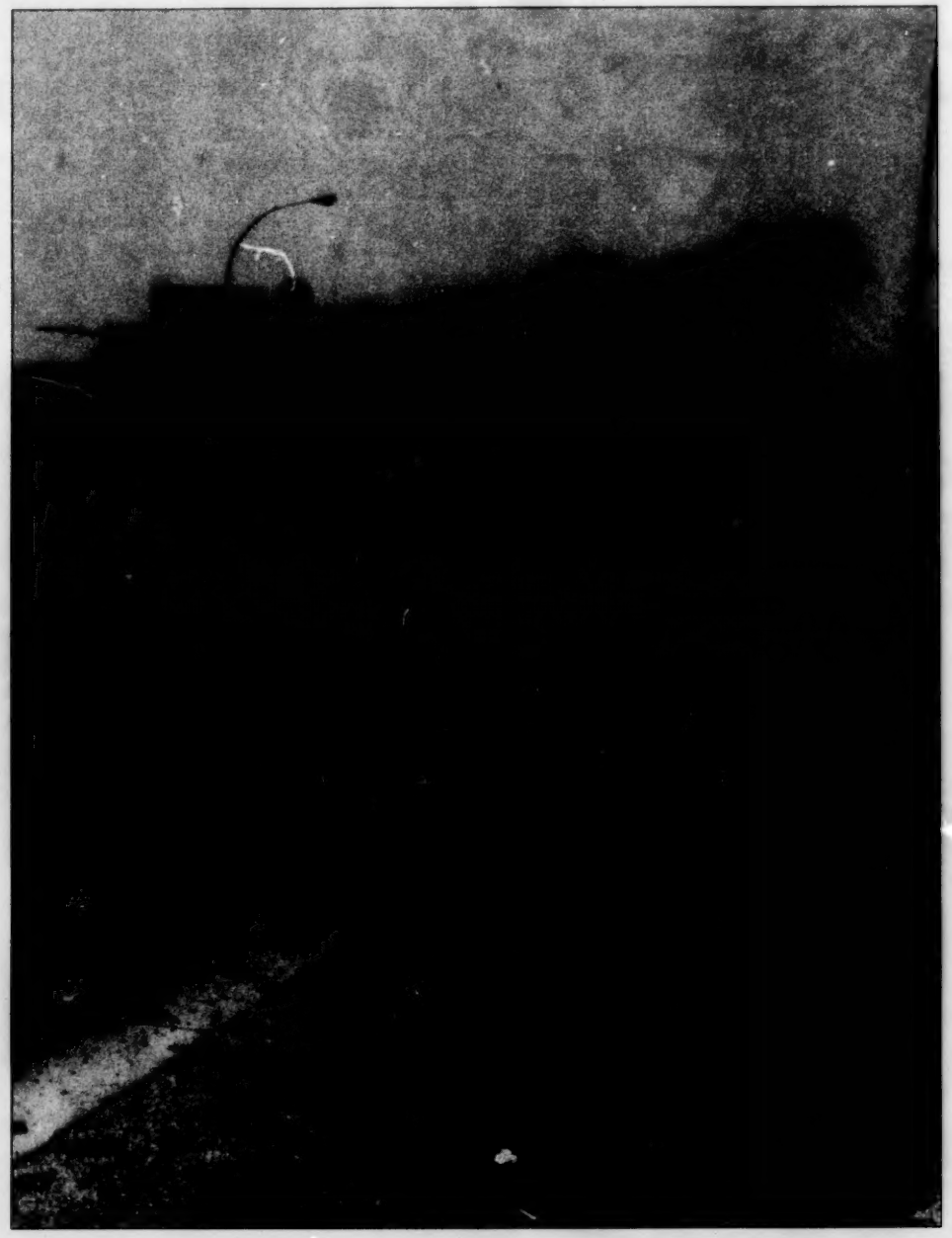
Vehicle Type	000	100	160	200	230	260	300	340	346	360	400	460	500	560	700	Other	Unknown	Total
Single Unit Truck/ Heavy	2	87	22	1	3	0	23	5	3	13	11	2	139	10	2	22	21	366
Heavy Truck/Trailer	0	34	5	0	0	0	0	0	0	0	0	0	4	1	0	13	7	64
Tractor Trailer	0	127	38	0	0	0	2	0	1	0	1	0	7	1	0	63	18	258
Tractor Trailer & Pup	0	96	24	0	0	0	0	0	0	0	0	0	1	0	0	41	8	170
Logging Truck & Pole Trailer	0	33	4	0	0	0	0	0	0	0	0	0	0	0	0	4	3	44
Local Transit Bus	0	14	8	37	7	8	0	0	0	0	9	0	1	1	0	27	5	117
Intercity Bus	0	6	1	4	4	0	0	0	0	0	6	0	0	0	0	4	0	25
Total	**2**	**397**	**102**	**42**	**14**	**8**	**25**	**5**	**4**	**13**	**27**	**2**	**152**	**13**	**2**	**174**	**62**	**1,044**

Note: This table lists all combinations of valid B.C. license classes. Out-of-province drivers are all grouped under "Other".
Note: "100" to "800" refers to driver licence classes 1 to 8. "340", for example, is a combination of class 3 and class 4

Table 16.12 – B.C. driver license class of heavy commercial vehicle drivers by vehicle type: Fatal collisions

Vehicle Type	100	160	200	230	300	500	Other	Unknown	Total
Single Unit Truck/ Heavy	6	1	0	0	5	10	0	1	23
Heavy Truck/Trailer	1	2	0	0	0	0	0	0	3
Tractor Trailer	11	5	0	0	0	0	9	2	27
Tractor Trailer & Pup	9	3	0	0	0	0	4	0	16
Logging Truck & Pole Trl	4	0	0	0	0	0	0	0	4
Local Transit Bus	0	0	2	1	0	0	1	0	4
Intercity Bus	0	1	0	0	0	0	2	0	3
Total	**31**	**12**	**2**	**1**	**5**	**10**	**16**	**3**	**80**

Note: This table lists all combinations of valid B.C. license classes. Out-of-province drivers are all grouped under "Other".
Note: "100" to "800" refers to driver licence classes 1 to 8. "340", for example, is a combination of class 3 and class 4



Police Jurisdiction Report*

SECTION 17

Southeast District
Kamloops
Kelowna
Nelson

Northern District
Prince George
Prince Rupert

Southwest District
Burnaby
Chilliwack
Coquitlam
North Vancouver
Richmond
Surrey
Vancouver

Island District
Courtenay
Victoria

Municipal Forces
Abbotsford
Central Saanich
Delta
Esquimalt
Nelson
New Westminster
Oak Bay
Saanich
Vancouver
Victoria
West Vancouver

*This section is based on the former RCMP organization of 14 sub-divisions. The current organization consists of 4 districts.

Table 17.01 – Traffic collisions by police jurisdiction – Kelowna subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions in Subdivision
Armstrong	50	2	52	2.98
Coldstream Municipal	25	2	27	1.55
Enderby	39	2	41	2.35
Falkland	18	2	20	1.15
Kelowna Municipal	469	3	472	27.03
Kelowna Provincial	258	7	265	15.18
Keremeos	22	1	23	1.32
Lumby	32	3	35	2.00
Oliver	50	0	50	2.86
Osoyoos	46	4	50	2.86
Penticton Municipal	128	2	130	7.45
Penticton Provincial	34	4	38	2.18
Princeton	65	2	67	3.84
Revelstoke Municipal	13	1	14	0.80
Revelstoke Provincial	40	3	43	2.46
Salmon Arm Municipal	52	2	54	3.09
Salmon Arm Provincial	46	0	46	2.63
Sicamous	27	3	30	1.72
Summerland	26	1	27	1.55
Vernon Municipal	188	3	191	10.94
Vernon Provincial	70	1	71	4.07
Total	**1,698**	**48**	**1,746**	**100%**

Table 17.02 – Victims in traffic collisions by police jurisdiction – Kelowna subdivision

Jurisdiction	Injured	Killed	Total Collisions	% of Total Victims in Subdivision
Armstrong	79	3	82	3.07
Coldstream Municipal	42	2	44	1.65
Enderby	68	4	72	2.69
Falkland	33	3	36	1.35
Kelowna Municipal	695	3	698	26.10
Kelowna Provincial	424	7	431	16.12
Keremeos	27	1	28	1.05
Lumby	46	3	49	1.83
Oliver	74	0	74	2.77
Osoyoos	76	4	80	2.99
Penticton Municipal	183	2	185	6.92
Penticton Provincial	58	5	63	2.36
Princeton	102	2	104	3.89
Revelstoke Municipal	24	1	25	0.93
Revelstoke Provincial	64	3	67	2.51
Salmon Arm Municipal	77	2	79	2.95
Salmon Arm Provincial	71	0	71	2.66
Sicamous	42	3	45	1.68
Summerland	39	1	40	1.50
Vernon Municipal	264	3	267	9.99
Vernon Provincial	131	3	134	5.01
Total	**2,619**	**55**	**2,674**	**100%**

Table 17.03 – Traffic collisions by police jurisdiction – Kamloops subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions in Subdivision
100 Mile	66	1	67	5.75
Alexis Creek	16	1	17	1.46
Anahim Lake	12	2	14	1.20
Ashcroft	34	1	35	3.00
Barriere	25	2	27	2.32
Chase	61	5	66	5.67
Clearwater	53	5	58	4.98
Clinton	45	1	46	3.95
Kamloops Municipal	336	5	341	29.27
Kamloops Provincial	80	3	83	7.12
Lillooet	7	4	11	0.94
Logan Lake	34	1	35	3.00
Lytton	48	2	50	4.29
Merritt Municipal	15	0	15	1.29
Merritt Provincial	130	7	137	11.76
Spences Bridge	1	0	1	0.09
Valemount	30	1	31	2.66
Williams Lake Municipal	55	1	56	4.81
Williams Lake Provincial	71	4	75	6.44
Total	**1,119**	**46**	**1,165**	**100%**

Table 17.04 – Victims in traffic collisions by police jurisdiction – Kamloops subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims	% of Total Victims in Subdivision
100 Mile	110	1	111	6.03
Alexis Creek	25	1	26	1.41
Anahim Lake	20	2	22	1.20
Ashcroft	53	2	55	2.99
Barriere	38	4	42	2.28
Chase	97	6	103	5.59
Clearwater	104	5	109	5.92
Clinton	67	1	68	3.69
Kamloops Municipal	513	5	518	28.14
Kamloops Provincial	128	3	131	7.12
Lillooet	13	6	19	1.03
Logan Lake	45	1	46	2.50
Lytton	97	3	100	5.43
Merritt Municipal	24	0	24	1.30
Merritt Provincial	219	7	226	12.28
Spences Bridge	1	0	1	0.05
Valemount	41	1	42	2.28
Williams Lake Municipal	84	1	85	4.62
Williams Lake Provincial	108	5	113	6.14
Total	**1,787**	**54**	**1,841**	**100%**

Table 17.05 – Traffic collisions by police jurisdiction – Nelson subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions In Subdivision
Castlegar Municipal	40	2	42	6.00
Castlegar Provincial	24	2	26	3.71
Cranbrook Municipal	54	1	55	7.86
Cranbrook Provincial	41	3	44	6.29
Crescent Valley	4	0	4	0.57
Creston	61	4	65	9.29
Elkford	6	0	6	0.86
Fernie Municipal	10	0	10	1.43
Fernie Provincial	27	1	28	4.00
Field	4	0	4	0.57
Fruitvale	14	2	16	2.29
Golden	83	3	86	12.29
Grand Forks	33	4	37	5.29
Invermere	25	0	25	3.57
Kaslo	13	1	14	2.00
Kimberley Municipal	19	0	19	2.71
Kimberley Provincial	19	1	20	2.86
Midway	22	2	24	3.43
Nakusp	19	1	20	2.86
Nelson Provincial	35	6	41	5.86
New Denver	8	1	9	1.29
Radium	2	0	2	0.29
Rossland	12	1	13	1.86
Salmo	25	0	25	3.57
Sparwood	24	1	25	3.57
Trail Municipal	22	0	22	3.14
Trail Provincial	18	0	18	2.57
Total	**664**	**36**	**700**	**100%**

Table 17.06 – Victims in traffic collisions by police jurisdiction – Nelson subdivision RCMP

Jurisdiction	Injured	Killed	Total Collisions	% of Total Victims In Subdivision
Castlegar Municipal	64	2	66	5.94
Castlegar Provincial	44	2	46	4.14
Cranbrook Municipal	78	1	79	7.10
Cranbrook Provincial	54	4	58	5.22
Crescent Valley	8	0	8	0.72
Creston	96	4	100	8.99
Elkford	10	0	10	0.90
Fernie Municipal	12	0	12	1.08
Fernie Provincial	46	1	47	4.23
Field	11	0	11	0.99
Fruitvale	23	2	25	2.25
Golden	140	3	143	12.86
Grand Forks	57	4	61	5.49
Invermere	31	0	31	2.79
Kaslo	21	1	22	1.98
Kimberley Municipal	23	0	23	2.07
Kimberley Provincial	28	1	29	2.61
Midway	34	3	37	3.33
Nakusp	38	1	39	3.51
Nelson Provincial	66	6	72	6.47
New Denver	14	1	15	1.35
Radium	3	0	3	0.27
Rossland	19	1	20	1.80
Salmo	44	0	44	3.96
Sparwood	41	2	43	3.87
Trail Municipal	37	0	37	3.33
Trail Provincial	31	0	31	2.79
Total	**1,073**	**39**	**1,112**	**100%**

Table 17.07 – Traffic collisions by police jurisdiction – Prince George subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions In Subdivision
Burns Lake	29	3	32	3.68
Chetwynd	29	3	32	3.68
Dawson Creek Municipal	24	1	25	2.87
Dawson Creek Provincial	43	1	44	5.06
Fraser Lake	10	0	10	1.15
Fort Nelson	42	1	43	4.94
Fort. St. James	17	0	17	1.95
Fort St. John Municipal	37	1	38	4.37
Fort St. John Provincial	32	3	35	4.02
Hudson Hope	1	0	1	0.11
Mackenzie Municipal	7	0	7	0.80
Mackenzie Provincial	13	0	13	1.49
McBride	14	1	15	1.72
Prince George Municipal	281	7	288	33.10
Prince George Provincial	95	11	106	12.18
Quesnel Municipal	38	0	38	4.37
Quesnel Provincial	62	4	66	7.59
Tumbler Ridge	5	1	6	0.69
Vanderhoof	43	3	46	5.29
Watson Lake	5	1	6	0.69
Wells	2	0	2	0.23
Total	**829**	**41**	**870**	**100%**

Table 17.08 – Victims in traffic collisions by police jurisdiction – Prince George subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims	% of Total Victims In Subdivision
Burns Lake	61	4	65	4.77
Chetwynd	44	4	48	3.52
Dawson Creek Municipal	32	1	33	2.42
Dawson Creek Provincial	77	1	78	5.72
Fraser Lake	21	0	21	1.54
Fort Nelson	68	1	69	5.06
Fort St. James	23	0	23	1.69
Fort St. John Municipal	51	1	52	3.81
Fort St. John Provincial	60	3	63	4.62
Hudson Hope	2	0	2	0.15
Mackenzie Municipal	11	0	11	0.81
Mackenzie Provincial	19	0	19	1.39
McBride	26	1	27	1.98
Prince George Municipal	415	7	422	30.94
Prince George Provincial	173	12	185	13.56
Quesnel Municipal	50	0	50	3.67
Quesnel Provincial	102	4	106	7.77
Tumbler Ridge	8	2	10	0.73
Vanderhoof	63	3	66	4.84
Watson Lake	10	2	12	0.88
Wells	2	0	2	0.15
Total	**1,318**	**46**	**1,364**	**100%**

Table 17.09 – Traffic collisions by police jurisdiction – Prince Rupert subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions In Subdivision
Atlin	2	0	2	0.60
Bella Bella	1	0	1	0.30
Bella Coola	12	1	13	3.87
Cassiar	0	0	0	0.00
Dease Lake	11	0	11	3.27
Granisle	2	0	2	0.60
Houston	33	2	35	10.42
Kitimat Municipal	26	0	26	7.74
Kitimat Provincial	12	1	13	3.87
Masset	11	0	11	3.27
New Aiyansh	17	0	17	5.06
New Hazelton	29	2	31	9.23
Prince Rupert Municipal	7	0	7	2.08
Prince Rupert Provincial	4	0	4	1.19
Queen Charlotte	16	0	16	4.76
Smithers	34	3	37	11.01
Stewart	10	2	12	3.57
Terrace Municipal	50	0	50	14.88
Terrace Provincial	46	2	48	14.29
Total	**323**	**13**	**336**	**100%**

Table 17.10 – Victims in traffic collisions by police jurisdiction – Prince Rupert subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims	% of Total Victims In Subdivision
Atlin	3	0	3	0.53
Bella Bella	3	0	3	0.53
Bella Coola	18	1	19	3.33
Cassiar	0	0	0	0.00
Dease Lake	21	0	21	3.68
Granisle	3	0	3	0.53
Houston	60	2	62	10.86
Kitimat Municipal	34	0	34	5.95
Kitimat Provincial	15	1	16	2.80
Masset	24	0	24	4.20
New Aiyansh	25	0	25	4.38
New Hazelton	59	2	61	10.68
Prince Rupert Municipal	14	0	14	2.45
Prince Rupert Provincial	8	0	8	1.40
Queen Charlotte	23	0	23	4.03
Smithers	61	3	64	11.21
Stewart	22	2	24	4.20
Terrace Municipal	83	0	83	14.54
Terrace Provincial	81	3	84	14.71
Total	**557**	**14**	**571**	**100%**

Table 17.11 – Traffic collisions by police jurisdiction – Vancouver subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions in Subdivision
Bowen Island	2	0	2	0.12
Coquitlam Provincial	18	2	20	1.25
Deas Island Freeway Patrol A	231	10	241	15.04
Port Mann Freeway Patrol B	47	2	49	3.06
Gibsons Provincial	41	1	42	2.62
Langley City	149	1	150	9.36
Langley District	366	5	371	23.16
Maple Ridge Municipal	276	7	283	17.67
Maple Ridge Provincial	11	0	11	0.69
Pemberton	35	2	37	2.31
Pitt Meadows	58	1	59	3.68
Sechelt Provincial	59	2	61	3.81
Squamish Municipal	58	5	63	3.93
Squamish Provincial	50	0	50	3.12
UBC Provincial	44	0	44	2.75
Whistler	61	1	62	3.87
White Rock	57	0	57	3.56
Total	**1,563**	**39**	**1,602**	**100%**

Table 17.12 – Victims in traffic collisions by police jurisdiction – Vancouver subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims	% of Total Victims in Subdivision
Bowen Island	2	0	2	0.08
Coquitlam Provincial	23	2	25	1.01
Deas Island Freeway Patrol A	334	10	344	13.94
Port Mann Freeway Patrol B	62	2	64	2.59
Gibsons Provincial	73	1	74	3.00
Langley City	215	1	216	8.75
Langley District	574	5	579	23.46
Maple Ridge Municipal	426	7	433	17.54
Maple Ridge Provincial	23	0	23	0.93
Pemberton	68	2	70	2.84
Pitt Meadows	103	1	104	4.21
Sechelt Provincial	83	2	85	3.44
Squamish Municipal	97	5	102	4.13
Squamish Provincial	90	0	90	3.65
UBC Provincial	57	0	57	2.31
Whistler	114	1	115	4.66
White Rock	85	0	85	3.44
Total	**2,429**	**39**	**2,468**	**100%**

Table 17.13 – Traffic collisions by police jurisdiction – Chilliwack subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions in Subdivision
Abbotsford Municipal	3	0	3	0.37
Abbotsford Provincial	1	0	1	0.12
Agassiz	51	4	55	6.74
Boston Bar	24	1	25	3.06
Chilliwack Municipal	283	0	283	34.68
Chilliwack Provincial	17	2	19	2.33
Hope Provincial	116	8	124	15.20
Mission Municipal	150	2	152	18.63
Mission Provincial	34	1	35	4.29
Sumas Freeway Patrol C	113	6	119	14.58
Total	**792**	**24**	**816**	**100%**

Table 17.14 – Victims in traffic collisions by police jurisdiction – Chilliwack subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims	% of Total Victims in Subdivision
Abbotsford Municipal	4	0	4	0.32
Abbotsford Provincial	1	0	1	0.08
Agassiz	89	4	93	7.35
Boston Bar	31	2	33	2.61
Chilliwack Municipal	414	0	414	32.70
Chilliwack Provincial	32	2	34	2.69
Hope Provincial	188	9	197	15.56
Mission Municipal	238	2	240	18.96
Mission Provincial	50	1	51	4.03
Sumas Freeway Patrol C	193	6	199	15.72
Total	**1,240**	**26**	**1,266**	**100%**

Table 17.15 – Traffic collisions by police jurisdiction – Victoria Subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions in Subdivision
Chemainus	20	0	20	1.73
Colwood Municipal	48	1	49	4.24
Colwood Provincial	176	2	178	15.38
Duncan Provincial	123	0	123	10.63
Gabriola Island	7	0	7	0.61
Ganges	45	0	45	3.89
Ladysmith	49	0	49	4.24
Lake Cowichan	26	1	27	2.33
North Saanich	39	0	39	3.37
North Cowichan-Duncan Municipal	118	1	119	10.29
Nanaimo Municipal	251	4	255	22.04
Nanaimo Provincial	27	3	30	2.59
Pender Island	7	0	7	0.61
Shawnigan Lake	94	3	97	8.38
Sidney Municipal	39	0	39	3.37
Sidney Provincial	2	0	2	0.17
Sooke	70	1	71	6.14
Total	**1,141**	**16**	**1,157**	**100%**

Table 17.16 – Victims in traffic collisions by police jurisdiction – Victoria subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims	% of Total Victims in Subdivision
Chemainus	27	0	27	1.59
Colwood Municipal	66	1	67	3.95
Colwood Provincial	253	3	256	15.08
Duncan Provincial	195	0	195	11.48
Gabriola Island	8	0	8	0.47
Ganges	59	0	59	3.47
Ladysmith	61	0	61	3.59
Lake Cowichan	36	1	37	2.18
North Saanich	56	0	56	3.30
North Cowichan-Duncan Municipal	174	2	176	10.37
Nanaimo Municipal	399	4	403	23.73
Nanaimo Provincial	42	3	45	2.65
Pender Island	12	0	12	0.71
Shawnigan Lake	144	3	147	8.66
Sidney Municipal	53	0	53	3.12
Sidney Provincial	4	0	4	0.24
Sooke	91	1	92	5.42
Total	**1,680**	**18**	**1,698**	**100%**

Table 17.17 – Traffic collisions by police jurisdiction – Courtenay subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions in Subdivision
Alert Bay	4	0	4	0.44
Campbell River Municipal	119	2	121	13.18
Campbell River Provincial	28	1	29	3.16
Comox	35	2	37	4.03
Courtenay Municipal	86	0	86	9.37
Courtenay Provincial	97	2	99	10.78
Gold River	6	0	6	0.65
Parksville Municipal	24	0	24	2.61
Parksville Provincial	133	4	137	14.92
Port Alice	3	0	3	0.33
Port McNeill	22	0	22	2.40
Powell Rv Municipal	44	0	44	4.79
Powell Rv Provincial	29	0	29	3.16
Port Alberni Municipal	92	2	94	10.24
Port Alberni Provincial	57	0	57	6.21
Port Hardy Provincial	18	0	18	1.96
Quadra Island	15	0	15	1.63
Qualicum Beach	22	1	23	2.51
Sayward	18	0	18	1.96
Tahsis	3	0	3	0.33
Texada Island	3	0	3	0.33
Tofino	14	0	14	1.53
Ucuelet	32	0	32	3.49
Total	**904**	**14**	**918**	**100%**

Table 17.18 – Victims in traffic collisions by police jurisdiction – Courtenay subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims	% of Total Victims in Subdivision
Alert Bay	5	0	5	0
Campbell River Municipal	181	4	185	13
Campbell River Provincial	41	1	42	3
Comox	56	3	59	4
Courtenay Municipal	118	0	118	9
Courtenay Provincial	163	2	165	12
Gold River	7	0	7	1
Parksville Municipal	37	0	37	3
Parksville Provincial	189	4	193	14
Port Alice	11	0	11	1
Port McNeill	26	0	26	2
Powell Rv Municipal	60	0	60	4
Powell Rv Provincial	38	0	38	3
Port Alberni Municipal	146	2	148	11
Port Alberni Provincial	92	0	92	7
Port Hardy Provincial	25	0	25	2
Quadra Island	19	0	19	1
Qualicum Beach	33	2	35	3
Sayward	25	0	25	2
Tahsis	6	0	6	0
Texada Island	3	0	3	0
Tofino	25	0	25	2
Ucuelet	47	0	47	3
Total	**1,353**	**18**	**1,371**	**100%**

Table 17.19 – Traffic collisions by police jurisdiction – Municipal Forces

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Municipal Forces Collisions
Abbotsford	470	5	475	8.96
Central Saanich	60	0	60	1.13
Delta	452	1	453	8.55
Esquimalt	67	0	67	1.26
Nelson	34	0	34	0.64
New Westminster	269	2	271	5.11
Oak Bay	39	0	39	0.74
Port Moody	110	0	110	2.08
Saanich	558	1	559	10.55
Vancouver	2,456	31	2,487	46.92
Victoria	559	4	563	10.62
West Vancouver	180	2	182	3.43
Total	**5254**	**46**	**5300**	**100**

Table 17.20 – Victims in traffic collisions by police jurisdiction – Municipal Forces

Jurisdiction	Injured	Killed	Total Victims	% of Total Municipal Forces Victims
Abbotsford	763	5	768	9.97
Central Saanich	105	0	105	1.36
Delta	642	1	643	8.35
Esquimalt	92	0	92	1.19
Nelson	46	0	46	0.60
New Westminster	398	2	400	5.19
Oak Bay	47	0	47	0.61
Port Moody	168	0	168	2.18
Saanich	751	1	752	9.76
Vancouver	3,654	31	3,685	47.84
Victoria	729	4	733	9.52
West Vancouver	261	3	264	3.43
Total	**7656**	**47**	**7703**	**100**

Table 17.21 – Traffic collisions by police jurisdiction – Burnaby subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions in Subdivision
Burnaby	776	12	788
Total	**776**	**12**	**788**

Table 17.22 – Victims in traffic collisions by police jurisdiction – Burnaby subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims in Subdivision
Burnaby	1,088	13	1,101
Total	**1,088**	**13**	**1,101**

Table 17.23 – Traffic collisions by police jurisdiction – Coquitlam subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions in Subdivision
Coquitlam Municipal	355	4	359	69.71
Port Coquitlam	155	1	156	30.29
Total	**510**	**5**	**515**	**100%**

Table 17.24 – Victims in traffic collisions by police jurisdiction – Coquitlam subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims	% of Total Victims in Subdivision
Coquitlam Municipal	566	4	570	72.15
Port Coquitlam	219	1	220	27.85
Total	**785**	**5**	**790**	**100%**

Table 17.25 – Traffic collisions by police jurisdiction – North Vancouver subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions	% of Total Collisions in Subdivision
North Vancouver City	227	3	230	57.93
North Vancouver Dist.	167	0	167	42.07
Total	**394**	**3**	**397**	**100%**

Table 17.26 – Victims in traffic collisions by police jurisdiction – North Vancouver subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims	% of Total Victims in Subdivision
North Vancouver City	303	3	306	57.30
North Vancouver Dist.	228	0	228	42.70
Total	**531**	**3**	**534**	**100%**

Table 17.27 – Traffic collisions by police jurisdiction – Richmond subdivision RCMP

Jurisdiction	Injury	Fatal	Total Collisions
Richmond	835	3	838
Total	**835**	**3**	**838**

Table 17.28 – Victims in traffic collisions by police jurisdiction – Richmond subdivision RCMP

Jurisdiction	Injured	Killed	Total Victims
Richmond	1,266	4	1,270
Total	**1,266**	**4**	**1,270**

Table 17.29 – Traffic collisions by police jurisdiction – Surrey subdivision RCMP.

Jurisdiction	Injury	Fatal	Total Collisions in Subdivision
Surrey Municipal	1,375	19	1,394
Total	**1,375**	**19**	**1,394**

Table 17.30 – Victims in traffic collisions by police jurisdiction – Surrey subdivision RCMP.

Jurisdiction	Injured	Killed	Total Victims
Surrey Municipal	2,325	21	2,346
Total	**2,325**	**21**	**2,346**